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VALUE OF EXTRANET IN COMPUTER PRODUCTS AND SYSTEMS CHANNEL MARKETING: Case Hewlett Packard Finland

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EXTRANETIN ARVO TIETOKONETUOTTEIDEN JA -JÄRJESTELMIEN
KANAVAMARKKINOINNISSA: Case Hewlett Packard Finland

Tutkimuksen tavoitteet

Tutkimuksen tavoitteena oli selvittää miksi kumppani valitsee extranetin, internet teknologiaan perustuvan sähköisen kommunikaatio- ja tiedonjakojärjestelmän, etsiäkseen ja vastaanottaakseen tietoa toimittajalta. Päätaavoite oli siis löytää extranet-palvelun hyödyt kumppaneille. Extranetin arvonmääritys aloitettiin tutkimuksessa tarkastelemalla kumppaneiden informaatiotarpeita ja heidän suosimiaan medioita vastaanottaa tarvitsemaansa tietoa ja sitä jatkettiin selvittämällä kumppaneille tärkeitä extranet-palvelun piirteitä ja ominaisuuksia. Lisäksi tavoitteena oli selvittää kumppaneiden kyky käyttää extranettiä, heidän palvelulle asettamia tietosisällöllisiä vaatimuksia ja kanavakommunikointiin toivomiaan parannuksia ylipäänsä.

Tutkimusmenetelmä

Tutkimuksen empiirinen osa suoritettiin case-tutkimuksena. Case-yritys oli Hewlett Packard Finland, jonka 45 erityyppistä kumppania haastateltiin puhelimitse tutkimusta varten. Haastatellut kumppanit edustivat monipuolisesti kanavan jäseniä, sillä mukana oli sekä suuria että pieniä jälleenmyyjiä, kauppiaita ja tukkureita. Kerätyssä tutkimusaineistossa oli sekä kvalitatiivista että kvantitatiivista aineistoa.

Tutkimuksen tulokset

Tärkeysjärjestyksessä kumppaneiden päätietotarpeet liittyivät logistiikkaan (tuotteiden saatavuus, toimituksen tilanne, vanhentuneet tuotteet), tuotteisiin (tuotekuvaukset, tekninen tuotetieto, esitteet), tukipalveluihin (tieto tukipalveluista, palveluorganisaation kuvaukset) ja tietoon markkinointiohjelmista ja -aikatauluihista. Tukipalveluissa henkilökohtainen kontakti nähtiin parhaana välineenä, mutta kaikki muu tieto haluttiin online muodossa. Haastatellut kumppaniorganisaatiot hyödynsivät internettiä ja sen mahdollistamia palveluja omassa liiketoiminnassaan ja siksi ne nähtiin myös kyvykkäiksi käyttämään extranet palvelua. Extranetin arvo kumppaneille muodostui saatavuudesta eli käytettävyydestä vuorokauden ympäri, helppokäyttöisyydestä ja tiedon keskittämisestä yhteen paikkaan sekä siellä olevan tiedon paremmasta todenmukaisuudesta eli paikkansapitävyydestä, kattavuudesta ja luotettavuudesta sekä tiedon suuremmasta painoarvosta eli ajankohtaisuudesta, sähköisestä muodosta, valikoivuudesta ja relevanttiudesta.

Avainsanat

Extranet, kanavamarkkinointi, organisaatioidenväliset tietojärjestelmät, sähköinen kaupankäynti, hyödyt.

VALUE OF EXTRANET IN COMPUTER PRODUCTS AND SYSTEMS
CHANNEL MARKETING: Case Hewlett Packard Finland

Research Objectives

This study aimed at clarifying why would a channel partner choose extranet, an electronic communication and information delivery service based on internet technology, as a preferred way to search for and receive information from computer systems and products seller. The main goal was to find out the major partner benefits of extranet service. To determine the partner value of extranet, the study started from examining the main information needs of channel partners and their preferred mediums to receive the needed information and continued by examining the preferred characteristics and qualities of extranet service. In addition, the objectives included clarifying the partners' abilities to use extranet, their expectations from extranet information content and perceptions on improvements that this new medium would bring into channel communication.

Research Methodology

The empirical study was a single-case study of Hewlett Packard Finland. Totally 45 partners of the case company were interviewed in telephone. Partners represented various types of channel members: mainly resellers, dealers and wholesalers. Because of this multiple level of analysis, the study involved an embedded case design. The data collected included both qualitative and quantitative elements.

Major Findings

Main information needs of partners in order of importance were logistical information (availability of goods, delivery status, obsolete products), product information (product and technical product descriptions, brochures), support information (support services, service organisation descriptions) and information on marketing events and programs. Support services required personal contact, but in all other information mentioned above the preferred medium was online form. Interviewee organisations exploited internet and services it enables in various ways and therefore they were presumed to have the capabilities to use extranet service. The major sources of extranet value for partners included greater accessibility: ease of access, ease of use, knowledge of location, increased truth of information: accuracy, comprehensiveness, degree of confidence as well as weight of information: timeliness, electronic presentation, selectivity and relevance.

Key Words

Extranet, channel marketing, interorganisational systems, electronic commerce, benefits.

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1. INTRODUCTION

1.1 Background to the Study

Increasing competition and market turbulence is driving organisations to improve their operations and to seek new and innovative strategies of success. Companies often notice that by concentrating on those things that they can do best and by outsourcing the rest, they are better equipped for continuous and devastating competition. This development tends to deepen the relationships with existing suppliers and partners. Nowadays it is also common that the development of processes and operations ignores the organisational boundaries which is another driving force behind closer partnerships and network organisations.

In addition, information technology is evolving rapidly and this development affects profoundly the way in which organisations conduct their business with others and also the way with which the work is done within an organisation. One recent information technology development is the emergence of interorganisational networks enabled by internet platform, TCP/IP (Transmission Control Protocol/Internet Protocol), which alters profoundly communication between and relationship of participating organisations. The internet technology can be seen as an enabling technical platform behind partnerships and network organisations.

Interorganisational network based on Internet technology, also called as extended company intranet or extranet, can bring significant benefits to both manufacturing organisations and its channel participants. For seller organisations it is economically feasible to promote these kind of systems because of the cost savings, efficiency gains and differentiation advantage they bring. The cost savings result from the ability to centralise the information to one form and to one place, thus the partners and customers can find what they need in electronic form with easy to use web browser from the seller's server. The differentiation

advantage can be achieved by introducing better service than competitors: as a result, the customers and partners may perceive the organisation to be more innovative and to offer better information delivery than its competitors.

Seller's benefit from extranet solution is heavily dependent from buyer's benefit: if extranet service is not beneficial to buyer, the buyer does not use it and thus, the seller must continue to deliver information in other forms. Electronic communication needs to replace at least partially traditional methods of delivering information in order to bring cost reductions for the seller and also the system needs to achieve a certain amount of users to be feasible for the seller to maintain. The customer and partner benefits of extranets are of primary interest in this study because without them, cost savings and required user amounts cannot be achieved.

1.2 Research Gap

Making use of Internet technology in business is becoming more and more common, but however, empirical research related to its business benefits is still relatively scarce. This study builds strongly on the themes introduced in relationships marketing, business networks research and interorganisational systems theory and aims at clarifying the channel partner perceptions of the extranet benefits in information delivery.

Relational exchanges have gained extensive academic attention. The work of Fontenot&Wilson has concentrated on the characteristics of relationships such as co-operation, interdependence, commitment, trust, power, conflict etc. (Fontenot&Wilson 1997) whereas Heide examined relationships as a form of interorganisational governance (Heide 1994). Buyer- seller relationships and partnership success have been examined by Anderson and Narus (1990), Dwyer, Schurr and Oh (1987), Mohr and Spekman (1994) and Morgan and Hunt (1994). This research has tried to capture the essence of relationships by examining the

relationship elements and variables and their impact on buyer-seller relationships. Communication has emerged as one theme influencing the relationship formation and development. However, thorough investigation of communication or information needs within relationships itself has not been the main interest of these studies. Mohr&Spekman regard communication behavior as one of three factors affecting partnership success, in their work the communication quality, information sharing and participation are variables that construct the communication behaviour of a company. Thus, even though the importance of communication within relationships has been recognised in previous research, it has not been the main focus. In this study, the role of communication in buyer-seller relationship is of primary interest, especially the role of electronic communication which has not gained vast academic attention until recently.

On the other hand, interorganisational systems research relevant to this study has concentrated on the battle between market based and hierarchical systems as well as on Electronic Data Interchange (EDI) applications between buyers and sellers and EDI's efficiency gains. The internet technology is, however, far more beneficial for businesses than EDI technology due to lower set up costs of the system, low usage costs of the internet, wide availability of the technology and user-friendly graphical interface with web browser. The internet technology has been exploited in commercial use only for appr. three years and therefore its impact on interorganisational systems theory is still relatively unexplored era as well.

1.3 Purpose of the Study

Research Problem

The underlying assumption is that extranet can provide value added for high technology vendor through more efficient and better channel management and for channel partner for example through improved availability of product and service

information, references etc. The vendors are presumed to promote extranets because of cost savings, differentiation possibilities, improved company image and client attachment they enable.

However, the value of extranets is in the end determined by its users, the partners. If the extranet does not provide any value added to the partner compared to the previous system, it is not worth taking into use. The new ways of servicing the partner must be valuable also in partner's mind and therefore it is essential for the seller to know the value drivers of electronic communication and preferred way of information delivery for partners.

Purpose of the Study

Therefore, the purpose of this study is to find out the information needs of computer vendor's channel partners and in which form, electronic or some other, do they want to receive this information. After obtaining this information, the value of extranet for partners can be more easily determined. This knowledge is essential for the seller when considering the effort he must make when introducing the extranet into channel communication.

Research Question

The main research question this study aims to answer is:

- Why does a channel partner choose extranet as a preferred way to search for and receive information from the seller?

The subquestions, which help in constructing a picture of extranet's value for partners, are following:

- What are the main information needs of channel partners and in what form do they want to receive the information they need?
- Are partners technically able to use extranet services?

- What kind of information do the partners expect to receive from extranet?
- What kind of information delivery improvements do they expect to get from the use of extranet?
- How do the partners value different extranet characteristics like 24 hour availability, easy-to-use user interface, graphics and speed?
- How important do the partners see the role of electronic communication in future interaction with the seller?

The theoretical part tries to clarify the theoretical background for the research problem elements with a funnel-like approach. Therefore, the study proceeds as follows: the wider context is presented first and after that, the exact relevance of that topic to this study is explained.

1.4 Definitions and Limitations

Definitions

For the purposes of this study there are seven key concepts that need to be defined:

Communication	Exchange of information between sender and receiver through certain channel (Wiio, 1974, 30).
Channel	External, contactual organisation that the management operates to achieve its distribution objectives (Rosenbloom, 1995, 5).
Marketing	Social and managerial process by which individuals and groups obtain what they need and want through creating, offering and exchanging products of value with others (Kotler, 1991, 5).

Seller	Company who manufactures and markets goods with help of its channel partners, also called as vendor in this study.
Partner	Company who is a member of seller's channel and buys and mediates seller's goods.
Customer	Small company or individual that buys from channel partners.
Value added	Perception of additional value compared to previous system.
Internet	Network of networks running on TCP/IP platform and connecting local area telecommunications networks.
Intranet	Company network that can exploit internet services, access is allowed only to members of own organisation.
Extranet	Extended intranet, interorganisational electronic communication system, access allowed also to partner organisations.

Limitations

First of all, the problematics of this study is not related to electronic networks as new delivery mediums. Instead, extranets are examined as interorganisational systems that can have powerful impact on vendor-partner interaction and relationship. The partners examined include large, medium-sized and small

businesses, but not consumers. Neither is extranet examined from the logistical perspective, the main emphasis is on examining delivery of current, timely and relevant information for partners. However, the research scope includes information delivery on for example good availability and order status, so logistical elements do exist. Relationship marketing provides a useful context for description of the seller-partner relationship but other relationship elements than communication are not of primary interest in this study since the ultimate purpose is to find out the benefits of new communication technology. Other relationship elements are introduced to such extent that is relevant when keeping in mind the purpose of this study. Extranet in business use is a new phenomenon and therefore the extranet literature available is scarce which can be noted by looking at the list of references. This fact has directed the course of this study: empirical findings were from the beginning seen as the major contribution of the study.

The empirical part of the study examines one case company selling high technology computer products and systems and its various channel partners. The complex nature of the products represent a substantial challenge for the seller's information delivery and therefore, the partner information needs and preferred mediums can be generalised only to businesses that market similar products. The case company also has well-established relationships/partnerships with its channel members that date back relatively long period of time. This of course has an impact on information needs and information delivery as well and therefore, when applying the results to some other company this should be kept in mind. The interviewees from channel organisations were selected on the basis that they were known personally and in continuous, almost daily, contact with company representatives. This was done because they were seen as the most potential users of company's future extranet service which was presumed to add their motivation to answer. The interviewee profile must be remembered when the results are considered since the close relationship may affect to the answers they gave.

1.5 Structure of the Study

The theoretical part of the study consists of two main chapters. The channel marketing from relationship and network perspective chapter has two aims: firstly, to clarify the context for the study in form of value system framework and the problematics of each value system participant and secondly, to deal with channel marketing from relationship and network perspective instead of traditional consumer-oriented marketing mix approach. The electronic communication and extranets chapter clarifies the interorganisational information systems and electronic commerce theories relevant to this study.

The empirical part consists of three chapters: methodology, findings and discussion and summary and conclusions. In methodology chapter the chosen empirical research approach is explained and evaluated against some methodological research literature. In findings and discussion chapter the empirical research findings of this study are presented and finally, in summary and conclusions chapter managerial implications of findings are discussed and suggestions for further research given.

2. CHANNEL MARKETING FROM RELATIONSHIP AND NETWORK PERSPECTIVE

In previous chapter *marketing* was defined as a **social and managerial process** by which **individuals and groups** obtain what they **want and need** through **creating, offering and exchanging products of value** with others (Kotler, 1991, 4) and *marketing channel* as the **external contactual organisation** that **management operates** to achieve its **distribution objectives** (Rosenbloom, 1995, 5).

This study focuses on channel marketing of a high technology marketing organisation and high technology markets can be characterised by such features as **product complexity**, market internationality, purchases of high unit value but infrequent occurrence, **importance of vendor reputation and level of service** to buyer, high switching costs and **long-lasting supplier-customer relationships** (Räsänen, 1994, 8-9). For high technology buyer there is considerable amount of risk related to every purchase because of product complexity, usually high purchasing and switching costs, uncertainty related to immature technologies and lack of technological expertise. As a result relationships between buyer and vendor as well as vendor's good reputation and level of service have powerful impact on purchasing decision.

These characteristics of high technology markets challenge the basic definition of channel marketing which is quite seller- and operation-oriented even though the customers' value drivers increasingly are service and reduction of uncertainty by long-lasting relationships as well as accurate and clear information delivery. Therefore, this study examines the channel marketing challenge from the relationship and network perspective since these theories emphasise the importance of relationship and interaction between the seller and the buyer. In this study the buyer can be a wholesaler, a reseller, a dealer or a large corporate

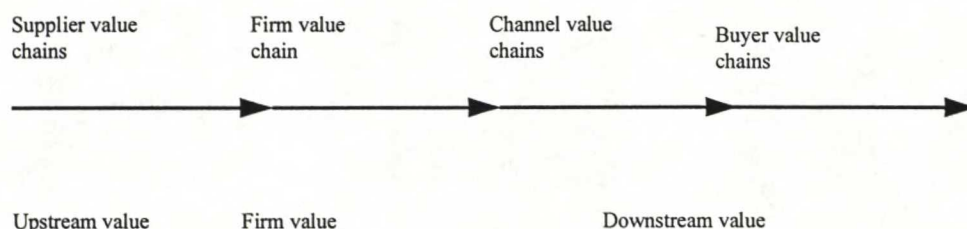
customer, anyone who buys directly from the seller or from the wholesaler and sells the goods (augmented or not) onwards (except corporate customers). Consumers are left out of examination since they buy small quantities and different products and do not mediate the goods they buy. However, also the customers behind resellers must be understood by vendor. To succeed in managing these channel members requires a lot of effort from the seller and in the following some of the most important relationship and network theories are presented in order to find out their solution to effective channel management.

2.1 Value System

The context for high technology channel marketing and vendor-channel-ultimate customer relationship and network can well be described by the value system framework presented by Porter and Millar. Company's value chain consists of value activities that are interdependent and therefore the chain performance depends as much on the single activity performance as the co-ordination of activities. The value chain for a company in a particular industry is embedded in a larger stream of activities that is called **the value system**. The value system includes the value chains of suppliers and buyers connected to the company's value chain. This is illustrated in figure 1. (Porter&Millar, 1985, 60-61)

Another, more descriptive, definition is provided by Jutter and Wehrli who define **a value system as a system of interdependent actors who raise the total value of the system by interactive value generating processes** and compete with other value systems in the "competition system" of which they are parts (Jutter&Wehrli, 1995, 233). However, from the channel marketing perspective the latter part of this definition is not necessarily true. In real life there are value systems that compete with each other but may have common channel participants. An example of this are computer wholesalers that are in close co-operation relationship with selling firm but still sell also competitors' products.

FIGURE 1. THE VALUE SYSTEM. SOURCE: PORTER&MILLAR, 1985.



Porter and Millar are primarily concerned of the competitive advantage creation of the company. According to them **a company can create competitive advantage by optimising and co-ordinating links to outside** as well as between its own value activities. Competitive advantage in either cost or differentiation is therefore a function of company's value chain, that means how efficiently the activities inside the company are performed and links between activities co-ordinated. (Porter&Millar, 1985, 64-65)

The value system offers a useful context to this study since it provides all the important actors of the study in on package or frame: the vendor, the channel and the final customer and the interconnectivity of their value chains: the relationships. In the following the problematics of each value system participant relevant to this study will be discussed.

2.1.1 Vendor

Historically it has been costly and time consuming to develop new and innovative high technology products. However, as a result of rapid general development of technologies, the product development is not anymore so difficult or costly as it used to be. Currently, the difficulty lies in the differentiation since there are so many companies selling high tech products similar from their technological backgrounds and fighting for the same customers (a good example of this is personal computers). The crucial question for high tech vendors therefore is, **how to differentiate themselves better and to gain competitive advantage.**

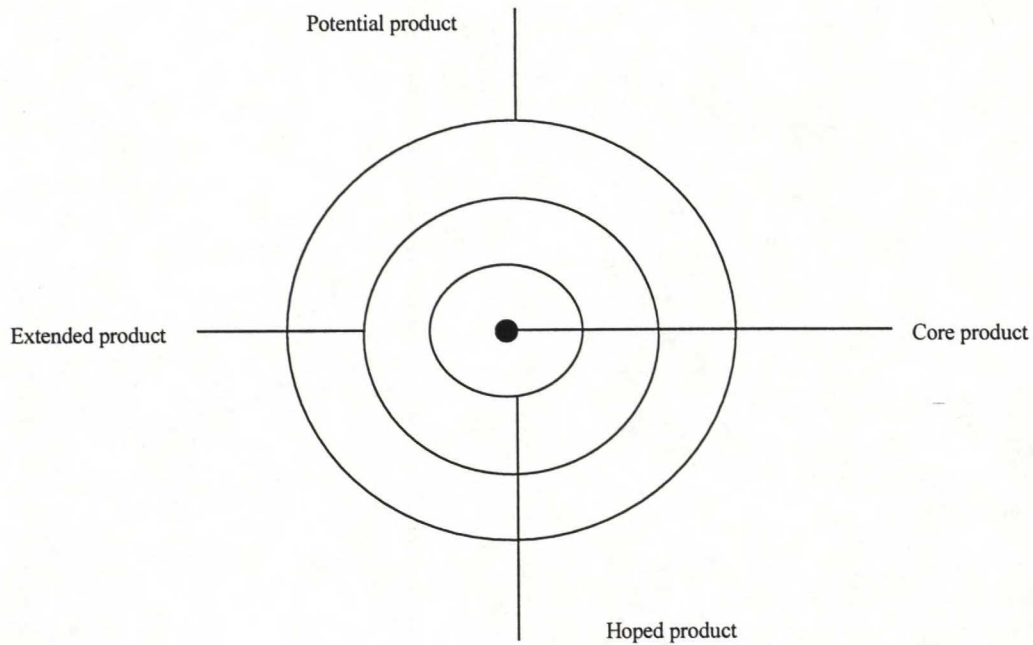
Davidow proposed a strategy as a response to this problem: marketing must invent **complete products** and drive them to **commanding positions** in **defensible market segments** (Davidow, 1988, 13). The point of interest in this study is not the market share dominance or market segmentation even though they are essential parts of the high technology vendor's strategy. Instead, the focus is on how high technology products can be made more complete to partners by improving information delivery with electronic communication.

The complete product concept is clearly essential for a high technology vendor's success. The completeness means that instead of just a plain product, the vendor offers its customers a solution to their problems. This solution can consist of various combinations of product, service, information, relationship etc. Whatever the vendor or the solution in question, **the competitive advantage lies in the thorough customer need recognition and fulfilment of those needs.**

Concept of Whole Product

The whole product concept is useful in illustrating more thoroughly how vendors can create successful and different offerings. The whole product consists of four layers: core product, expected product, expanded product and potential product. Each layer adds some value to the product offering in addition to the former layer. The core product in high technology is the basic technological solution which allows the vendor to enter the game. The expected product consists of the minimum customer requirements from a product in addition to core product. These expectations vary of course across customers, conditions and industries. The extended product offers even more to a customer than he wishes. The potential product includes all possibilities to attract and keep customers. See figure 2. (Levitt, 1986, 107-115)

FIGURE 2. THE WHOLE PRODUCT. SOURCE: LEVITT, 1986.



According to the logic of this study the added value of electronic approaches to a high technology solution results from improved information delivery in channel relationships. The customer gets more than he expects or is used to expect and thus, the product offering is made more complete.

Importance of Service for Channel Partners

Many companies define customer service as product delivery and repair accompanied by friendly behaviour on the part of their service provider. But this definition does not take into account all elements that have influence on customer satisfaction. Obviously the product is the core of customer satisfaction but the importance of prepurchase and postpurchase activities that add value to the offering, cannot be ignored. These nonproduct activities include everything that the vendor can do to reduce the customer's information search and ordering costs, in-bound logistical costs, operation and maintenance costs and trade-up or disposal costs. (Cespedes, 1995, 224)

The main purpose of high technology vendor's customer service is to add value to the product offering, thus expand the core product (see figure 2). The value added of high technology vendor's customer service is mainly based on **uncertainty reduction**: when obtaining relevant and timely information and real help, the channel partner is able to serve its own customers better. High technology products have complex technological backgrounds and if problems occur, the customer definitely needs capable help and fast in order to avoid major business losses. Therefore **customer service is an essential part of customer's purchase criteria and an essential source of differentiation advantage for vendors.**

2.1.2 Channel

The channel is the seller's tool to reach the ultimate customers, such as small companies and common consumers, since it is the channel that knows the market needs because of its straight, daily involvement with these customers. As the customer is the primary interest of marketing, seller's effective channel management is one of the most important ways to provide real end customer satisfaction.

The reason for channel existence is the continuous need for specialisation. When a bigger task is broken down into smaller ones and they are allocated efficiently, a greater well-being results for all. In other words, the seller does not need to waste any resources to tasks that the channel can complete more efficiently. When a marketing channel has been developed, a series of flows emerges and these flows provide the links that tie channel members and other agencies together in the distribution of goods and services. The flows are product flow, negotiation flow, ownership flow, information flow and promotion flow. (Rosenbloom, 1995, 14 and 18)

The product flow refers to the actual physical movement of the products from the seller through all the parties who take possession of the product to final consumer.

The negotiation flow represents the interplay of the buying and selling functions associated with the transfer of the title to products. The ownership flow refers to the movement of the title to the products. The promotion flow refers to the flow of persuasive communication in the form of advertising, personal selling, sales promotion and publicity. **The information flow, which is the primary interest in this study, represents the two directional communication necessary for the realisation of other flows.** (Rosenbloom, 1995, 14-15)

The channel is responsible for the selling function to final customers. Sometimes the ownership has passed on to channel members, sometimes the seller has the title to products and the channel members receive commission from the products they sell. In either case, the channel expects the seller to provide relevant and accurate information related to the other flows mentioned above. Information related to products and logistics is essential, but also other types of information and support is needed and required by channel members. And the seller has very much incentive to provide the information needed since good channel members are hard to find.

Technology Adoption among Channel Members

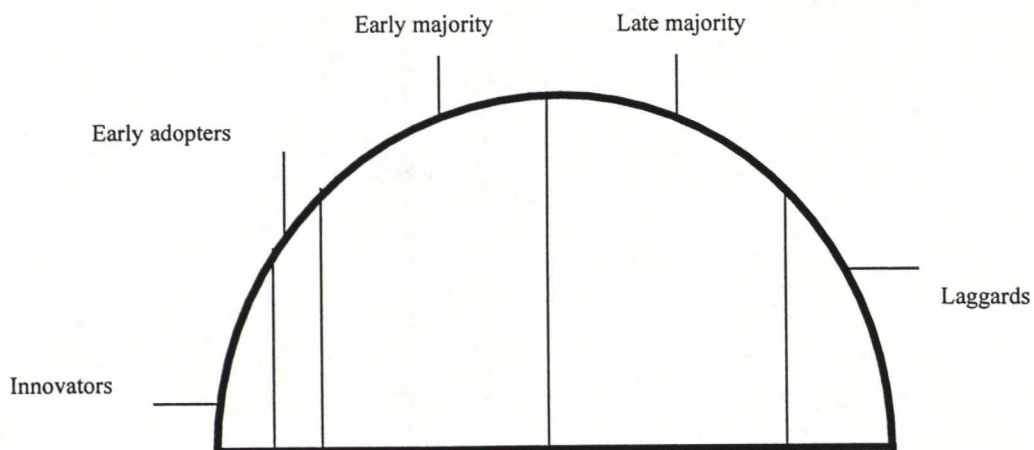
Rogers defines an innovation as an idea, practise or object that is perceived as new by an individual or other unit of adoption. The perceived newness of the idea determines his or her reaction to it. Diffusion of innovation is the process by which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication since the messages communicated are new ideas. (Rogers, 1983, 5 and 11)

The technology adoption life cycle (TALC) model developed by Geoffrey A. Moore (Figure 3) is based on the innovation diffusion research by Everett Rogers and it describes the acceptance of new products by five adopter categories: **innovators, early adopters, early majority, late majority and laggards.** Each

category represents a psychographic profile which responds differently to innovations. The marketing implication of this is the requirement of different marketing approaches to each category. (Moore, 1991, 11-12)

Innovators pursue new technology products aggressively because technology is central interest in their life. Early adopters adopt new product concepts early in their life cycle but, unlike innovators, they are not technologists. They are people who appreciate and understand the benefits of a new technology. Early majority is driven by strong sense of practicality in contrast to early adopters. They know that many new technologies have tendency to fail and therefore they wait and see how other people are doing before they buy themselves. They also appreciate references when purchasing. Late majority shares all same concerns as early majority but in addition, they are not comfortable when handling with new technologies. They only buy established standards. And like early majority, this group comprises about one-third of the total buying population in any given segment. (Moore, 1991, 13)

FIGURE 3. ILLUSTRATION OF TECHNOLOGY ADOPTION LIFE CYCLE. SOURCE: MOORE, 1991.



Also the **characteristics of an innovation** such as relative advantage, compatibility, complexity, trialability and observability help to explain their different rates of adoption. **The relative advantage is the most important**

determinant of the adoption speed. The better the innovation is compared to the superseding idea, the faster the adoption. Compatibility is the degree to which the innovation is perceived by user to be consistent with his existing values, experiences and needs. Complexity is the degree to which an innovation is perceived as difficult to understand and use. Observability determines how easily the results of an innovation are visible to others. The easier it is to see the results, the more likely is also the adoption. In general, innovations with greater relative advantage, compatibility, trialability, observability and less complexity, will be adopted more quickly. (Rogers, 1983, 15-16)

The high technology marketing model by Moore says that a vendor must work the TALC curve from left to the right, focusing first on the innovators and growing that market then proceeding to early adopters and so on. Companies must use each captured group as a reference base when trying to approach the next. The revised TALC introduces a gap between each adopter category because each adopter group will have difficulties in adoption if the new product is presented in a same way as it was to the previous adopter group. The biggest gap is, however, between early adopters and early majority. It is called a chasm and it results from different buying motives of these two groups. Early adopters buy a revolutionary solution and want to be the first ones within their own industries to implement this kind of a solution, whereas early majority clearly buys evolution and not revolution. (Moore, 1991, 14-21)

The relevance of innovation adoption to this study comes from the fact that as the extranet solution is introduced to channel members, the members may react to technology in different ways depending on their business needs but also on their individual characteristics. For innovators technology is a central interest in their life and for them the relative advantage does not play a significant role. But when moving the curve onwards, the importance of relative advantage grows.

2.1.3 Customers

High technology customers are of course as various as the products themselves. However, at the very general level the high technology vendors face two different markets behind their partners: consumers and industrial buyers. In these categories there are both new and existing customers to be targeted through the channel. As explained earlier, the common consumer is out of this study's scope. The characteristics of industrial buyers are shortly discussed since channel members must serve them and mediate seller's goods for them which requires seller to take this into consideration when making information provision decisions.

Industrial buyers face high levels of investment and high perceived risk when purchasing high technology. The high perceived risk is a result of product complexity, high purchase value and essentiality of the purchase. Therefore, the purchase decisions are more complex and cannot always be regarded to be based on the attractiveness of vendor's marketing mix. Purchasing of industrial buyers can be characterised more like a growing commitment to a particular supplier resulting from previous experiences they have from the supplier. (Räsänen, 1994, 9)

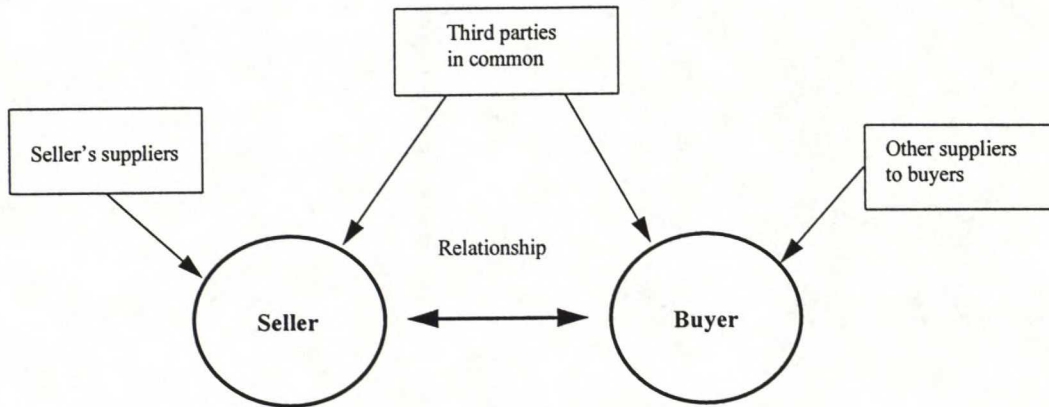
When an industrial buyer is compared to a common consumer, there are several differences. Industrial buyer is very rational, well-trained and usually technically competent. Also the buying risks are higher for industrial buyers than for consumers due to the economic disasters that bad choices can cause. Unlike in consumer markets, in industrial markets the buyer-seller relationship is usually rather close and stable. A supplier, partner and ultimate customer can be described to be mutually dependent. (Räsänen, 1994, 15)

2.1.4 Suppliers

The buyer-seller relationship is of primary concern in this study and the suppliers' role within the value system will be discussed from that perspective. The performance of the vendor in its partners' eyes is of course partly dependent on the quality of vendors' own suppliers. If vendor's supplier fails to deliver in time, it may delay the vendor's delivery to its partner and final customer. Also the quality of supplier's parts affects the quality of vendor's offering. In some cases vendor's suppliers may even have influence on the customer's purchase choice. As an example one can compare personal computers with Intel microprocessors to ones with some other brand to realise the supplier importance.

The supplier has definitely influence on vendor-customer relationship. This influence can theoretically be described by network functions or secondary functions presented in the business networks literature. The secondary functions capture the **indirect** positive and negative effects of a relationship (in this case of buyer-seller relationship) because this relationship is directly connected to other relationships such as seller-supplier relationships (examples above). In a given relationship, secondary functions can be as important as primary ones, or even more important when primary functions are defined to be the **direct** positive and negative effects on the two firms resulting from a dyadic interactive relationship. This is illustrated in figure 4. (Anderson & al, 1994, 3)

FIGURE 4. ILLUSTRATION OF BUYER-SELLER RELATIONSHIP IN NETWORK CONTEXT. SOURCE: ANDERSON ET AL., 1994.



2.1.5 Links within a Value System

During last two decades information technology has enabled companies to achieve significant efficiency and effectivity gains in their internal operations. But the IT continues to develop and as a result networking capabilities to outside world via technology are becoming more and more economically feasible for companies to use. The vendors are able to reach their customers and vice versa in real-time independent of geographical location. Currently used networking applications such as electronic mail and bulletin boards are getting more sophisticated company as networks start to carry audio and video in addition to data. Video conferencing is already a reality, but not so commonplace as it could be because of the high level of investment required. However, it can be expected that within a few years for example high technology vendors will be able to present their customers customised video repair instructions for their products via computer network if they so wish.

In 1991 Venkatraman presented a five stage model of IT-enabled business reconfiguration, which describes very clearly the steps that companies usually take when introducing IT into their operations. In the first stage IT is exploited within existing, isolated business activities such as in accounting or inventory. In the

second stage the company builds its own internal electronic infrastructure, or platform, that integrates processes and functions. Stages 3, 4 and 5 that follow are not sequential which means that companies can pursue each one of them when they have completed stages 1 and 2. Third stage consists of Business Process Redesign, thus of rethinking the most effective way to conduct business. Fourth stage is called Business Network Redesign and it aims to improve firm's effectiveness by using IT to include suppliers and customers to the firm's network. Fifth stage assesses the potential role of IT in the redefinition of business scope. (Venkatraman, 1991, 123-124)

IT-enabled Business Network Redesign (BNR) can link members of the value system to each other with new and innovative ways with the help of technology which improves the outcome of all participants through better efficiency, improved communication and service and closer relationship. However, the participants must have the same level of technological knowledge and readiness to use new mediums in order to succeed in BNR exploitation. Otherwise the benefits will not realise.

2.2 Approaches to Relationships

Without existing relationships with channel members, there would be no possibility to implement an extranet service. That is the primary reason for investigation of relationships in the theoretical part of this study. Relationships also offer a context and atmosphere for information exchange and information exchange in turn has powerful influence on the relationship development.

Relationship marketing emphasises the development and enhancement of relationships over the customer life cycle rather than new customer acquisition. This approach stresses the relationship over one time transaction which can be seen in customer retention concentration. In addition, the relationship marketing approach addresses not only customer markets, but also supplier, internal, referral,

recruitment and influence markets. (Payne, 1995, 30-31)

Moving customers up the loyalty ladder is not simple. Organisations need to know exactly what each customer is buying (remember that every customer is different) and also how they can offer additional differentiating satisfaction to customers. The only way to move a customer from a prospect to a loyal client is to replace customer satisfaction with customer delight. (Payne, 1995, 33)

Relationship marketing paradigm changes the traditional marketing mix in all its four dimensions. The value of a product is determined by the interactions between buyer and seller and not within a company. The attitude towards pricing is also changing. The relationships should be treated as investments and therefore the life time value of customer should be the core of pricing instead of one single transaction. The core of communication mix should not be in product features, but in individual customer characteristics and preferences. Each transaction with customers can be stored in marketing databases due to developed communication technology and this is the essence of relationship marketing, because it enables the customisation of products and services. The marketing channels should not be ignored either, because they affect profoundly the customer's perception of a vendor. (Juttner&Wehrli, 1995, 224-225)

Successful relationships marketing requires commitment and trust from the participants. **Commitment** and **trust** are essential because they encourage buyers and sellers to work at preserving the existing relationships, to resist attractive short-term alternatives in favour of the long-term benefits of staying together with the existing partners and finally, because they discourage opportunistic behaviour. Relationship commitment can be defined as the partners' belief in importance of an ongoing relationship that makes them want to stay together indefinitely. Trust can be conceptualised existing when one party has confidence in an exchange partner's reliability and integrity. (Morgan&Shelby, 1994, 20-23)

In addition to commitment and trust characteristics, relationship marketing has characterised relationships with characteristics like level of co-operation and interdependence, power, conflict, communication, relationship termination costs, benefits and shared values in a relationship. (Fontenot&Wilson, 1997, 6-8)

2.2.1 Interaction Approach

The work of International Marketing and Purchasing (IMP) Group is relationship oriented as well but from a slightly different perspective. Relationship marketing originates from two realisations: firstly, consumer marketing is about repeat purchases and secondly, the customers who buy frequently are preferred to customers that buy only once. As the relationship marketing tradition is interested in consumers, the IMP Group focuses on business markets. IMP Group argues that relationship marketing approach is largely a one-sided process with an active seller and a passive buyer which is inappropriate when business is considered from partnership perspective. **The work of IMP Group builds on the assumption that both marketers and their customers are active within relationships which describes very well the orientation of electronic communication.**

International Marketing and Purchasing (IMP) Group represents the European tradition in business marketing research. Their **interaction model**, which is illustrated in figure 5, offers a useful context for examining buyer-seller interaction in high technology market environment since in the model, all the variables and processes present in relational interaction are stated in a concise and understandable manner.

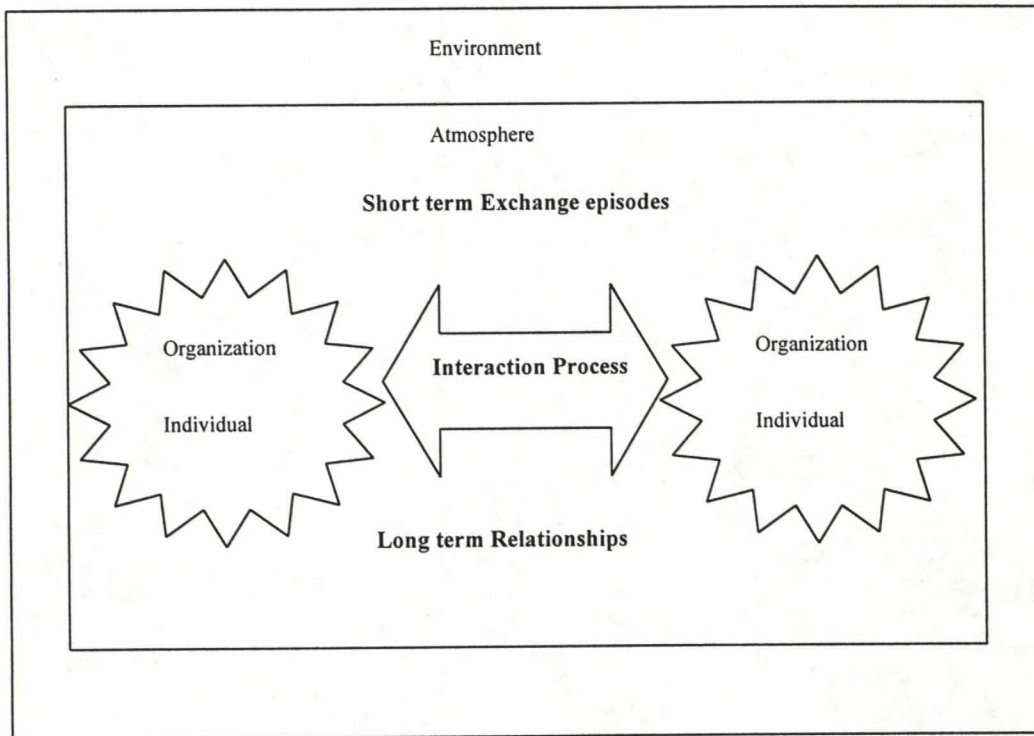
The marketing and purchasing of industrial goods is seen as an interaction process between two parties within a certain environment. The model consists of four elements:

1. The interaction process
2. The participants
3. The environment within which interaction takes place
4. The atmosphere affecting and affected by the interaction

The interaction process is the primary interest in this study since it provides the context for information exchange and use occurring in relationships and it can be described by two elements: **episodes and relationships**. The episodes refer to the **exchanges occurring between two parties**, whereas the nature of relationship between two parties can be described with the help of **contact patterns and adaptations** occurring in that relationship. (IMP Group, 1982, 10-13)

The exchanges between two parties can be classified into product or service exchange, information exchange, financial exchange and social exchange. The product or service exchange is often the core of the exchanges and the characteristics of product or service have a significant effect on the relationship as a whole. In information exchange **the content, width and depth of information, the means of transferring the information** (personal or impersonal) and **the formality of information exchanged** are of interest. The third element in interaction process is financial exchange and naturally, the quantity of money exchange is powerful indicator of the economic importance of the relationship. The social exchange aims at reducing uncertainty between the two parties and ultimately to interlocking the firms with each other. (IMP Group, 1982, 10-13)

FIGURE 5. THE INTERACTION MODEL. SOURCE: IMP GROUP, 1982



The nature of relationship between two parties can be described with the help of contact patterns and adaptations occurring in that relationship. Thus, introducing an extranet service may have influence on the nature of relationship because it may change some of the contact patterns between partner and seller and also because it requires some adaptations between them. Contact pattern change may occur if partners accept extranet fully and use it in information search and reception instead of mediums that they used to use. Seller must adapt its operations according to partner behaviour.

In empirical part of this study information content, width and depth components of information exchange are addressed as well as the means of transferring the information. This is done by examining what kind of information the channel partners need and in what extent and finally, what medium do they want to use to get that information.

2.2.3 Taxonomy of Buyer-Seller Interaction

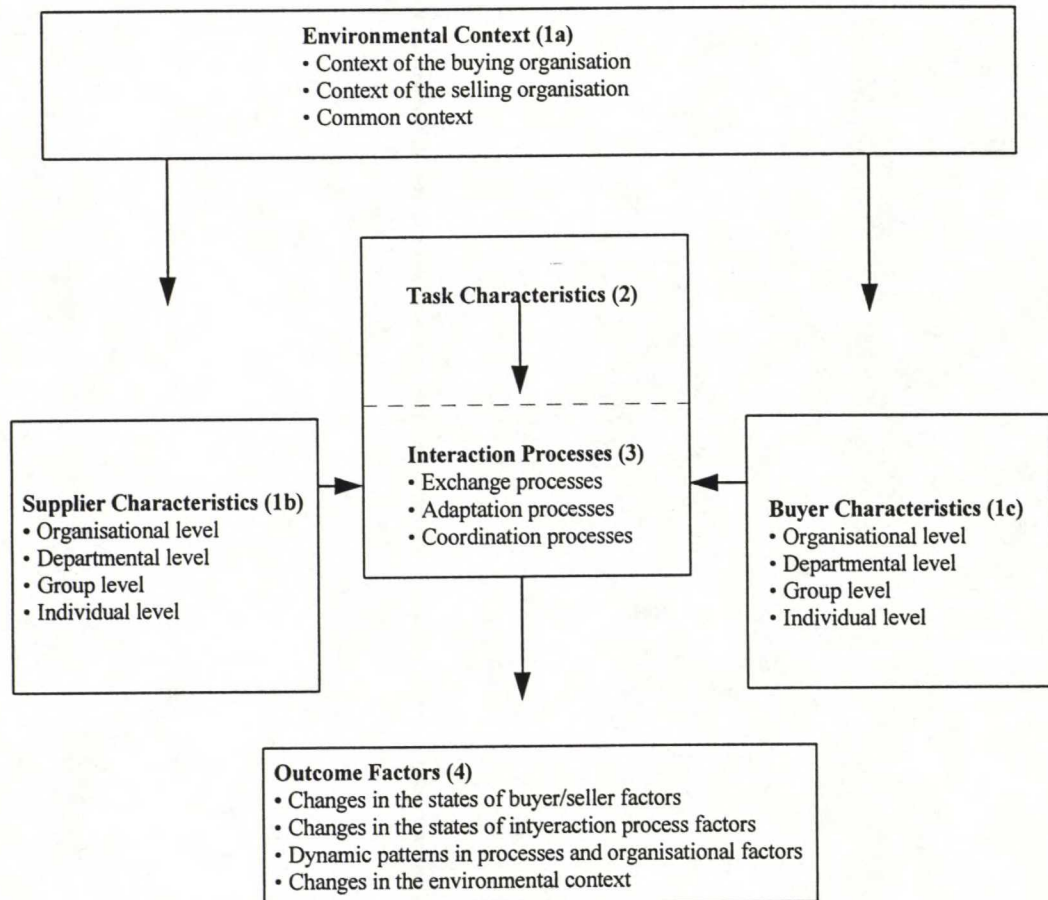
Möller and Wilson present a taxonomy of buyer-seller interaction factors (Figure 6) which models **the interaction between buyers and sellers through task and organisational characteristics, interaction processes, environmental context and outcome factors**. In this study context task characteristics refer to the factors that are related to the exchange of products and services. The nature of the task, its simplicity or complexity, and its exchange frequency are the most important features that have influence on interaction. **Interaction process factors refer to the three basic processes through which the exchange of resources is carried out: exchange itself, adaptation and co-ordination.**

The exchange process consists of exchange of resources and social resources exchange. Resources can be physical, technological, financial and informational or know-how resources. Adaptation process occurs when both buyer and seller realise that by modifying their own operations or resources, they can benefit more from the exchange relationship. Co-ordination is the development and use of mechanisms that facilitates the control of exchange. Organisational characteristics represent buyer and seller specific properties of interactants. Environmental context connects the interaction to the markets and society where it takes place and outcome factors refer to the changes that occur in organisational performance, interorganisational co-ordination and environment as a result of interaction. (Möller&Wilson, 1995, 24-33)

Introducing an extranet service into channel interaction can be regarded as an adaptive interaction process within buyer-seller relationship because both actors have to modify their current behaviours. The motives for electronic approaches lie foremost in improved information delivery and acquisition, thus extranet is an effort to improve information exchange process as well. As the information exchange is essential for other exchanges to take place, extranet is also an effort to

improve the co-ordination process.

FIGURE 6. TAXONOMY OF FACTORS IN BUYER-SELLER INTERACTIONS. SOURCE: MÖLLER&WILSON, 1995.



2.3 Business Networks

In order to understand what goes on inside a business company we need to know about its relationships, but to understand what goes inside a company's relationships we need to try to understand the network of which they form part. Only at the network level we can start to make sense of the dynamics of business markets. (Ford, 1997, 99)

Understanding of business networks is relevant to this study because of the nature

of the case company and its channel. Firstly, the case company operates in computer products and systems business that is one part of the converging telecommunications, media and computer industry. Globally the industry can be characterised to be very turbulent, for example because of the development of new technologies and as a result, continuously changing nature of the products. To cope with this development trend, the industry is reshaping itself. The result of many partnerships and strategic alliances is a complex web of interactants that all have influence on each other. Seller must be able to inform its partners about its alliances and partnerships that may foster the purchase decisions of channel partners. Secondly, the channel of the case company (and also the channels of competing companies) consists of various kinds of participants: wholesalers, resellers, corporate customers etc. The partners may compete or co-operate with each other, they buy also from competitors of the case company and they evaluate the seller's performance also from the network perspective: the ability of the case company to belong to and to format networks and is a part of their purchase criteria.

There are number of different ways of describing networks: networks as sets of relationships, networks as some sort of structure for the activities that go on between firms, networks as the aggregation of the separate positions of different firms and the processes that occur in networks. (Ford, 1997, 99-100)

In this study networks are taken into consideration because of the complex nature of case company channel. The channel consists of small and big companies, of wholesalers and resellers and of corporate customers and dealers. The network perspective is useful in describing and modelling complexity of relationships and the influence that different network participants have on each other.

2.3.1 Networks as Relationships

This perspective into business networks regards relationships to consist of four

elements: mutual orientations, the dependence that each has upon the other, bonds and strengths and the investments each has made in the relationship. Each of these elements may of course vary significantly. Mutual orientation is important in a relationship, but not a reason to enter into one. More importantly, firms see the relationships to allow more effective acquisition of resources and sale of product as well as they see the relationships as a way to reduce uncertainty and increase stability. The dependence is the price the firm has to pay from these benefits in a sense that when entering into a relationship, the problem of power and control division must be solved. Firms are also bonded to each other which means that they are not entirely free to dissolve those bonds at will. (Easton in Business Markets, 1997, 106-108)

Information is the common currency of interfirm relations and all the other elements operate via communication of information. The collection of information is one of the primary uncertainty reduction activities that firms adopt and networks provide a means to do so. The relative ease of exchange and transmission is necessary for fast and efficient information delivery.

2.3.2 Networks as Structures

If the firms in an industrial system are interdependent rather than independent, then the network will have a structure (Easton, 1992, 112).

As interdependence of firms increases, the clearer the structure of the network becomes and the tasks that each network participant completes, can be more easily identified. **As in organisations, also in networks the processes that complete the tasks and the structure are heavily interrelated.** This is an important point since according to that statement, the network structure also influences interorganisational communication processes and vice versa. (Easton, 1992, 112-114)

The challenge remains in creating such network structures that support the communication processes of the participating organisations and also to create such communication processes that do follow efficient network structure.

2.3.3 Networks as Processes

There is no one clear focus for the research under this heading, but network processes can be seen as a co-ordination mechanism in interorganisational relationships. The co-ordination need begins from the level of the dyad and is strongly present at the network level as well. Network processes are dominated by the distribution of power and interest structures and as a result some companies have access to more and better resources than others. Two processes occurring in networks are competition and co-operation, there are both competitive and co-operative networks. Networks are stable, but not static. The presence of relationships in networks makes the networks dynamic. (Easton, 1992, 116-118)

Summary of Chapter Two

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Chapter two has introduced the players of this study: seller, partner, customer, supplier and links between them. Understanding the problematics of each player's business is essential when considering information exchange needs. Partner's business is to serve its customer and the seller must keep this in mind when providing information and service. In addition, partners differ from their technology adoption capabilities, which should also be kept in mind when extranet is introduced.

Relationships offer the context for information exchange and without existing relationships, an introduction of extranet service would not even be possible. Thus, relationship must exist before extranet introduction. However, even though existing relationship is a sort of pre-condition for extranet introduction, the relationship can also develop as a result of extranet service. Interaction perspective

is crucial when extranets are considered because interaction is a reciprocal process and so should be information exchange via extranet. All the benefits of extranets will not realise if information provision and search is only a one-way process. The network perspective illustrates well the fact that information provision of one player is often dependent of information provision of other players.

3. ELECTRONIC COMMUNICATION AND EXTRANETS IN BUSINESS USE

The purpose of electronic approaches to high technology marketing is to leverage IT capabilities to restructure business relationships with external partners so that a firm-level strategic advantage can be obtained. However, the unique characteristics of electronic mediums need to be considered by high technology marketers.

Hoffmann and Novak define **computer mediated environment (CME)** as a dynamic distributed network, potentially global in scope, together with associated hardware and software for accessing the network, which allows consumers and firms to 1) **provide and interactively access hypermedia content** (machine interaction) and 2) **communicate through the medium** (person interaction). The primary communication relationship in CMEs is not between the sender and receiver, but rather with the mediated environment with which both parties interact. Because of the interaction, the sender is also a receiver. (Hoffmann&Novak, 1995, 7).

Currently three theoretical perspectives in the field of interorganisational relationships research have been dominant: organisation theory, transaction costs economics and political economy. The first attempts to conceptualise the interorganisational relationships have been made in organisation theory. The point of focus were the structural and behavioural (or process) characteristics of relationships. The major limitation was that the constructs from within-organisation setting were adapted to an across-organisations level. (Bensaou&Venkatraman, 1993, 4-5)

Transaction Costs Analysis (TCA) has been used to analyse how investments required by interorganisational system participants can affect the most efficient

mechanism for co-ordinating exchanges between them. In other words, specialised interorganisational information systems (IOIS) have high asset specificity and therefore they cannot be redeployed easily to alternative uses and users. On the contrary, IOIS that have low asset specificity can be deployed also to other uses. (Nidumolu, 1995, 90)

The third approach, the political economy framework developed in marketing channel research, is more a holistic approach and it takes into account both the economic and political dimensions of the dyad (in this case dyad is the buyer-seller relationship). Economic dimensions refer to relationship costs and political dimensions to organisational and psychological aspects of a relationship. (Nidumolu, 1995, 91)

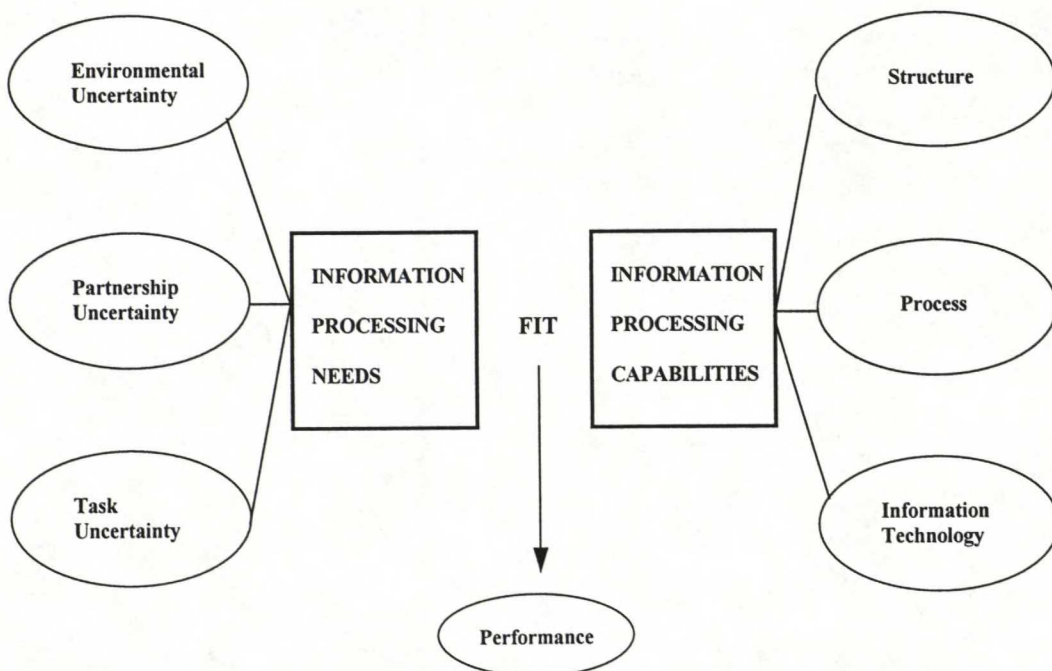
An information processing view of inter-organisational co-ordination by Bensaou and Venkatraman (Figure 7) integrates elements of the three theories mentioned above and tries to describe **organisations as information processing systems which collect, process, exchange and distribute information**. Compared to the interaction model of IMP Group, this model explains more thoroughly why organisations need to collect, process, exchange and distribute information. Based on this view Bensaou and Venkatraman propose a model of interorganisational co-ordination which is a useful framework also when considering buyer-seller relationships in electronic networks. (Bensaou&Venkatraman, 1993, 7-8)

The model illustrated in figure 7 recognises three generic sources of **uncertainty leading to the information processing needs of a dyad**. First, there is **environmental uncertainty** about the general market conditions surrounding the relationship, secondly, there is **partnership uncertainty** about a focal firm's perception regarding a partner's future behaviour and thirdly, there is also **task uncertainty** about the specific task jointly accomplished. **The greater the uncertainty in each dimension, the greater are the information processing needs.**

Thus, organisations need to collect, process, exchange and distribute information in order to reduce uncertainty. Previously presented interaction models have concentrated solely on the information exchange within relationships, seeing the seller to be the sender and the partner to be the receiver. But it is important to note that to be able to exchange and distribute information, the seller must gather and process information within its own organisation and interorganisational information systems are of help in accomplishing this task.

To cope with the uncertainty, organisations employ a number of **alternate coordination mechanisms** which **independently** and **collectively** contribute to increasing information processing capabilities of the dyad. (Bensaou&Venkatraman, 1993, 9)

FIGURE 7. INFORMATION PROCESSING VIEW OF INTERORGANISATIONAL COMMUNICATION. SOURCE: BENSAOU&VENKATMARAN, 1993.



Formalisation, intensity, multiplicity, asymmetry and boundary interpretation are

characteristics of **structural co-ordination mechanisms**. Information processing capabilities of organisations are proposed to increase with higher intensity, higher multiplicity, higher boundary interpretation and lower formalisation and asymmetry of mechanisms. **Process co-ordination mechanisms** represent the climate within which the structural mechanisms are embedded. They can be either co-operative or conflictual or something in between. **Technological co-ordination mechanisms** represent the use of IT for facilitating interorganisational co-ordination as opposed to intraorganisational uses. (Bensaou&Venkatraman, 1993, 12-13)

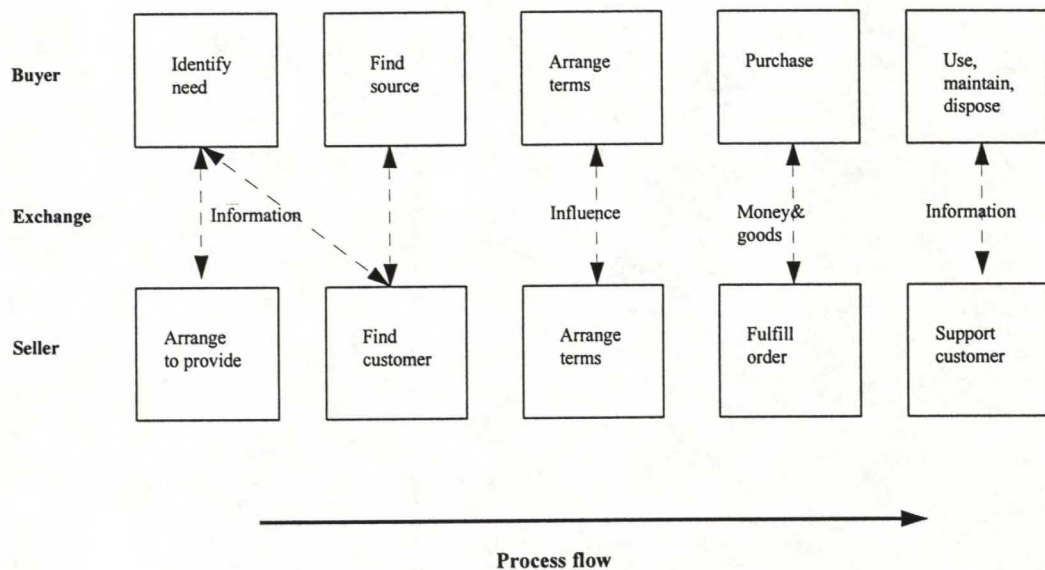
When the model is applied to high technology buyer-seller relationship, there are at least two matters that deserve special attention. First, the uncertainties from the buyer perspective are related to the task and environment (to the product and to the evolving standards, for example), whereas from the vendor point of view they are related mainly to the partnership and environment (to the customer life time value and to the competitors' actions). However, **many uncertainties present in high technology marketing increase the overall information processing needs**. Second, information processing capabilities may be very different among the organisations.

3.1 Electronic Commerce

Electronic commerce can be defined as the buying and selling of information, products and services over computer networks. Bloch et al. propose even wider definition: according to them **electronic commerce is support for any kind of business transactions over a digital infrastructure** (Bloch et al., 1996, 2). This kind of definition matches better with the broader uses of electronic commerce deployed by companies such as Silicon Graphics, which uses its presence on the World Wide Web to provide information, to market its products, as a sales channel and to offer support. From a buyer-seller relationship perspective, electronic commerce can be used in all the phases of a commerce transaction and

also in after-marketing and relationships building as described in figure 8. (Bloch et al., 1996, 2)

FIGURE 8. ELECTRONIC COMMERCE MODEL. SOURCE: BLOCH ET AL., 1996.



Electronic commerce systems can be of significant value as a lever for new customer management strategies, because they connect directly buyers and sellers, support fully **digital information exchange** between participants, **suppress time and place limits**, support interactivity and can therefore adapt dynamically to customer behaviour and also because they can be updated in real time, being all time **up-to-date** (Bloch et al., 1996, 2).

Bakos defines an electronic marketplace as an interorganisational system that allows the participating buyers and sellers to exchange information about prices and product offerings. The information on prices and products available in electronic market systems reduces drastically the search costs buyers must pay to obtain purchase information. Because the buyers' search costs are reduced, the sellers face substantial profit reductions and the interorganisational transactions become more efficient. (Bakos, 1991, 295)

3.1.1 Electronic Markets and Hierarchies

Electronic market systems tend to cut sellers' profits (Bakos, 1991) and therefore they are not necessarily preferred by vendors when electronic commerce solutions are considered. Electronic hierarchies have therefore emerged as more feasible electronic commerce forms for vendors.

The difference between electronic markets and hierarchies is based on the asset specificity introduced in the transaction cost analysis. In commercial exchanges where interorganisational information systems (IOIS) significantly reduce the specificity of required investments, the most efficient governance system is the market. However, **in exchanges where electronic integration of buyer and seller increases the asset specificity of investments, an electronic hierarchy will emerge.** (Nidumolu, 1995, 90)

Under a hierarchical mechanism, value chain activities are controlled and directed by management decisions rather than by market. A buyer does not choose from many potential sellers as in electronic market system, instead, he procures goods and services from predetermined supplier. Hierarchical control can take many forms between organisations, from long term buyer-seller relationships even to partnerships. In contrast, under a market mechanism the relationships are relatively short lived because buyers purchase from the supplier with the best combination of price, quality, quantity and delivery schedule (availability of perfect market information is assumed). (Steinfield et al., 1996, 6)

Based on the above discussion it is assumed in this study that the hierarchical approaches to electronic commerce are more feasible in channel co-operation since they can exploit networks to strengthen existing relationships and in some cases even to lock in partners by increasing their switching costs.

3.1.1.1 Internet

Internet is the biggest and widest public network and **electronic market system** currently in use and its importance to marketing in general cannot be argued. Internet commerce has shown to be successful in consumer oriented products and services like books, travelling, magazines, banking etc. However, the shortcomings in the electronic payment and identity registration systems still pose major obstacles to Internet commerce development.

Early developers of Internet were faced with the problem how to make different computers of various sizes and types to communicate with each other. They came up with a new approach to link computers: TCP/IP protocol. TCP/IP adds a standardised layer of information to messages. This layer can be sent from any kind of terminal over the network and be recognised by any type of computer after passing a piece of communications hardware called a file server. This layered approach allows the conversion of data required for different types of computers to be able to talk with each other. (Cronin, 1995, 30)

Even though Internet was not originally developed for commercial transactions, it can be used to continuous interactions between the buyer and the seller. Cronin describes these interactions with a continuum of marketing, sales and support. In marketing Internet resources can be exploited via home pages, gopher server, newsgroups and direct e-mail. In sales Internet offers possibilities to use electronic catalogues, privacy enhancements and commercial platforms. In support a help desk, Fixes & updates and user discussion groups can be created. (Cronin, 1995, 192)

The importance of TCP/IP to this study is that TCP/IP is the extranet platform. This means that the partly interconnected networks of buyer and seller communicate with each other by using TCP/IP and therefore offer the same characteristics as Internet but with enhanced privacy and security and possibility

to greater bandwidth in private (fixed) connection.

3.1.1.2 Intranet and Extranet

An Intranet is an internal information system based on Internet technology, web services, TCP/IP and HTTP communication protocols, and HTML publishing. With an Intranet any user, at any level, can publish information. This makes information reliable because it comes from the source. The individual can serve the information that can be read in any browser, and make itself linkable to any other server. Uses of intranets include executive decision support systems, sales cycle automation tools, financial systems, on-line analytical processing (OLAP) applications, personal productivity applications, financial trading floor systems, procurement and business-to-business commerce applications, document management systems, and customer support and help desk applications. (Hinrichs, 1997, 1)

An extranet can be defined as partly connected intranets of two companies for commercial purposes. From the seller's perspective extranet is therefore an interorganisational hierarchical electronic commerce system open only for selected partners, running on TCP/IP and allowing partners access information available on seller's server. Technologically extranet mediated buyer-seller relationship can be expanded (or shrunk) when needed even to the customers' customers.

3.1.2 Sources of Business Value

If the impacts of electronic commerce on organisations were put into three words, the words would be improvement, transformation and redefinition of business. More thoroughly expressed, improvements can be gained in product promotions, sales channel, cost reductions, time to market, customer service and brand image. Technological and organisational learning and changing customer relations will

transform business and as a result, business models and product capabilities will be redefined. (Bloch et al., 1996, 4)

Direct, information-rich and interactive contact with customers will enhance product promotions. Product information can be delivered through on-line and customised electronic brochures and buying guides to customers. Electronic commerce systems also present a new sales channel for existing products and in markets where information is of significant value. When **information is centralised to one place**, this creates substantial advantage for customers. By using digital marketing systems vendors can also save in phone, post and printing costs. Cycle times in producing and delivering information to customers will reduce when using electronic commerce systems. Customer service can be improved through **on-line answer to problems, resolution guides, archives of commonly asked problems and electronic mail interaction** (in future also audio and video support). Monitoring how customers use this kind of information provides insights on needed improvements on current products and feedback for new product development. Electronic commerce systems can also be of significant value to technology-friendly customers and enhance the image of both the product and the high technology company. (Bloch et al., 1996, 4-6)

The learning curve of adopting electronic commerce technologies and understanding their power to reshape customer relationships is steep and therefore success cannot be achieved overnight. For this reason companies should get familiar with the new technologies as soon as possible. Companies should not ignore the fact that new technologies require new organisational approaches and changes within an organisation may need to be made when e-commerce is introduced. However, if electronic commerce is successfully introduced, it will allow more personalised relationships between suppliers and customers due to their ability to collect and restore information on customer needs and behavioural patterns. It will also allow new, innovative products to be created or existing products to be customised in a new way, which is one of the largest sources of e-

commerce business value. In some consumer-oriented industries electronic commerce will create new business models by changing industry structures. (Bloch et al., 1996, 6-8)

3.2 Extranets

Interorganisational data networks can have two opposing effects on buyer-seller relationships. Networks may be used to foster electronic marketplace arrangements between buyers and sellers. This is likely approach when products concerned are consumer oriented and not complex of their nature. However, another possibility is the use of networks to strengthen existing commercial relationships and lock in partners by increasing their switching costs. The empirical results of Steinfield et al. suggest that this approach (electronic hierarchies) is more prevalent especially in product categories of high complexity. (Steinfield et al., 1996, 1)

The more extensively the firms used the inter-organisational networks, the more hierarchical were their relationships with trading partners, even when using highly open public data network infrastructures. The economic explanation for the existence of these kind of hierarchical arrangements is that the benefits gained from higher integration of production and marketing activities outweigh the benefits gained from easily finding another sources of supply. However, to see where the electronic networks provide benefit, the unit of analysis must be shifted to the level of transaction. Each transaction is unique and the detailed benefits and costs of electronic commerce can be examined only by concentrating on a certain type of transaction. (Steinfield et al., 1996, 13-14)

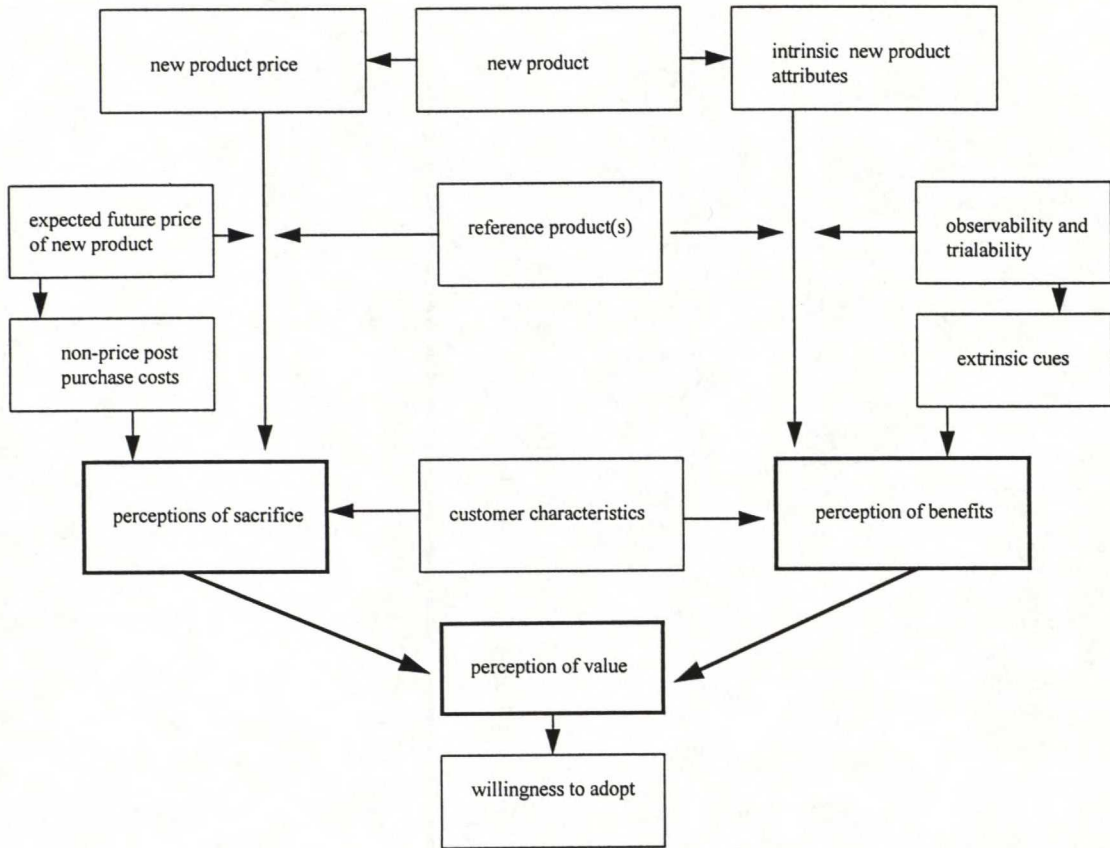
This study aims to explain why partners choose extranet as a preferred information exchange medium. There is no simple answer but extranet must provide value to the partner and even some additional value compared to previous systems. In the following a short overlook into birth of value perceptions is

provided as a basis for discussion on extranet benefits.

3.2.1 Linking benefits, sacrifices and value perceptions

Users assess the potential benefits of a new product as well as the sacrifices to be made in order to derive to these benefits. New product benefits may include superior products quality, new features, convenience and other functional, psychological and social aspects that are considered desirable by potential adopters. Sacrifices, on the other hand, include the purchase price of a new product as well as other non-price costs. These costs include all costs that potential adopters may incur to acquire, install, operate and consume the new product. Consumers weigh the potential benefits against the sacrifices and this comparison results in perception of value. The higher the perceived value, the greater is the user willingness to adopt a new product (See figure 9). (Mazumdar, 1993, 29)

FIGURE 9. LINKING BENEFITS, SACRIFICES AND VALUE PERCEPTIONS. SOURCE: MAZUMDAR, 1993.



End users evaluate a new product relative to a reference product. A reference product is the consumer's next best alternative to the new product. The reference product can also be current practises or behaviors that the new product is targeted to replace, complement, modify or augment, it does not necessarily need to be a physical product. Since needs, preferences and applications vary across users, different users may use different reference products to evaluate the same new product (Forbes and Mehta, 1978, 25). Moreover, users may use one reference product to evaluate one set of attributes of the new product but use a different reference product to evaluate other attributes (Mazumdar, 1993, 30).

Factors that affect customers benefit perceptions can be classified into intrinsic product attributes and extrinsic cues. **Intrinsic product attributes** mean

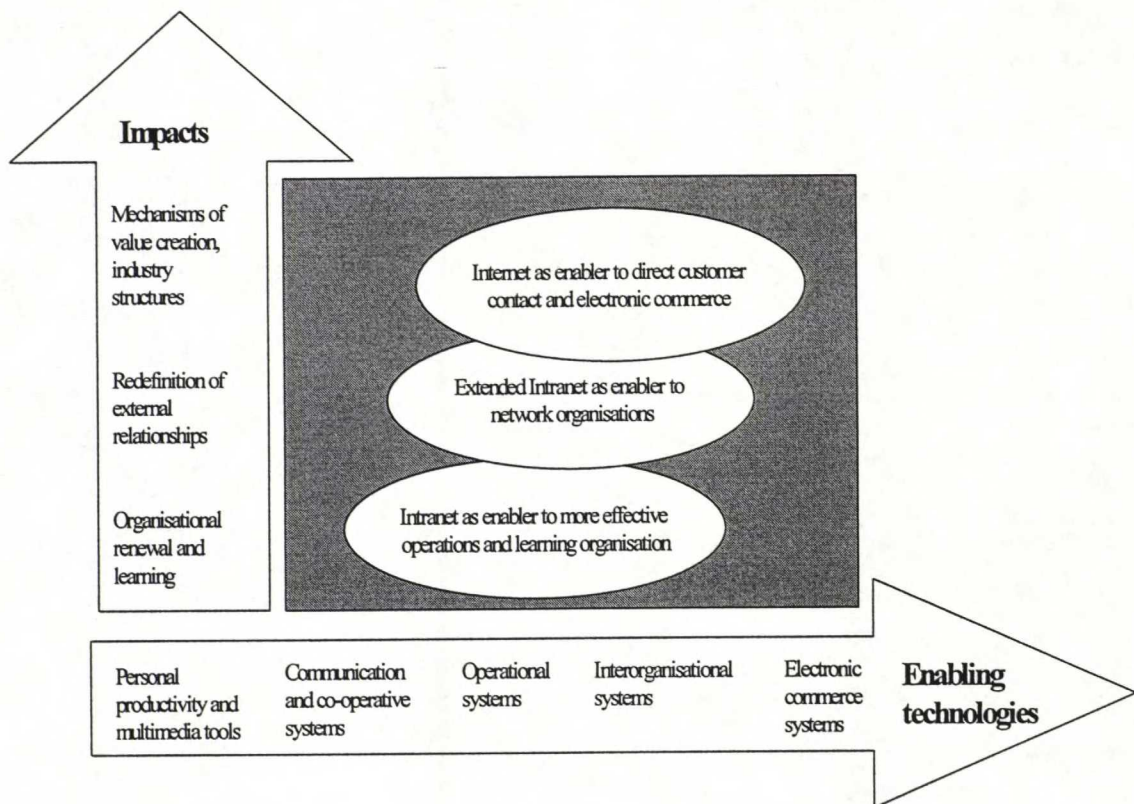
additional need-satisfying properties relative to reference product. These attributes may be such things as superior technology, quality, design or workmanship (in this case they could be additional beneficial medium characteristics compared to previous system of receiving information). New products may also offer economic benefits like savings to the user. (Mazumdar, 1993, 30)

Extrinsic cues are those pieces of information that are not physically related to the new product but are still used by consumers to assess future product performance. These cues could be such things as reputation and innovativeness of launching firms, product's country of origin, expert or reference group opinion, brand names and product prices. In this case extrinsic cues could be improved company image of HP due to its well functioning extranet solution with improved information delivering quality.

Even though the model originally is created to describe the birth of new product benefit perceptions, it can be applied to examine partner's perception of extranet value. According to the model the perception of benefit and sacrifice as well as partner characteristics determine the value of extranet and affect the adoption extranet among channel partners. Thus, to get as many early adopters as possible, seller must maximise the difference between benefit and sacrifice.

3.2.2 Extranet Benefits for Seller Organisation

FIGURE 10. THREE ROLES OF INTERNET TECHNOLOGY IN BUSINESS RENEWAL.
SOURCE: HANNUS ET AL., 1996.



According to Hannus et al. (1996, 117) extranet service improves:

- Sharing, control and exploitation of information
- Communication and co-operation
- Operational applications, connection of systems between companies

through improvements in following company processes:

- Research and development
- Marketing and sales
- Ordering, production, logistics
- Customer service
- Control of activities:

TABLE 1. EXTRANET IMPROVEMENTS. SOURCE: ADAPTED FROM HANNUS ET AL., 1996.

	Sharing, control and exploitation of information	Communicati on and co- operation	Operational applications, connection of systems between companies
Research and development	Model solutions for channel members, control of product information, extended R&D team	Feedback from partners and customers, discussion groups	
Marketing and sales	Product and service information as well as competitor and market information for channel members	Feedback from partners and customers	Configuration, pricing and sales tools for partners
Ordering, production, logistics			Partner's ability to connect to logistics systems
Customer service	On-line documentation for partners		
Control of activities	On-line training		

In addition to improvements in company processes, this table also presents the most important information categories for partners. In the empirical part this table has served as basis for the table, where partners are asked to evaluate the case company's performance related to different types of information, the importance of each information category and finally, in what form would they like to receive different types of information. Research and development and control of activities were left out of the empirical part of the investigation since the marketing and service information are of primary interest. However, it must be noted that extranets can be exploited in relation to them as well.

3.2.3 Extranet Benefits for Partners

The pushing force behind extranet development is the vendor's continuous need to improve and differentiate its offering to partners. Partners are interested to have current and timely information on availability of products, responsible personnel, use instructions of products and current balances and in order to compete successfully vendors must be able to provide this information and fast.

Organisations need to sense and respond to customer desires rather than simply make and sell products. Extranets can help vendors to learn from their customers and based on this knowledge, vendors can propose better solutions to customer needs. The technology enables recording of every customer inquiry, purchase, request for service or complaint. All this data helps the vendor to customise the offering, but also, it creates a switching barrier for the customer since the customer would have to teach the competitor everything that the vendor already knows about his needs. (Bloch et al., 1996, 7)

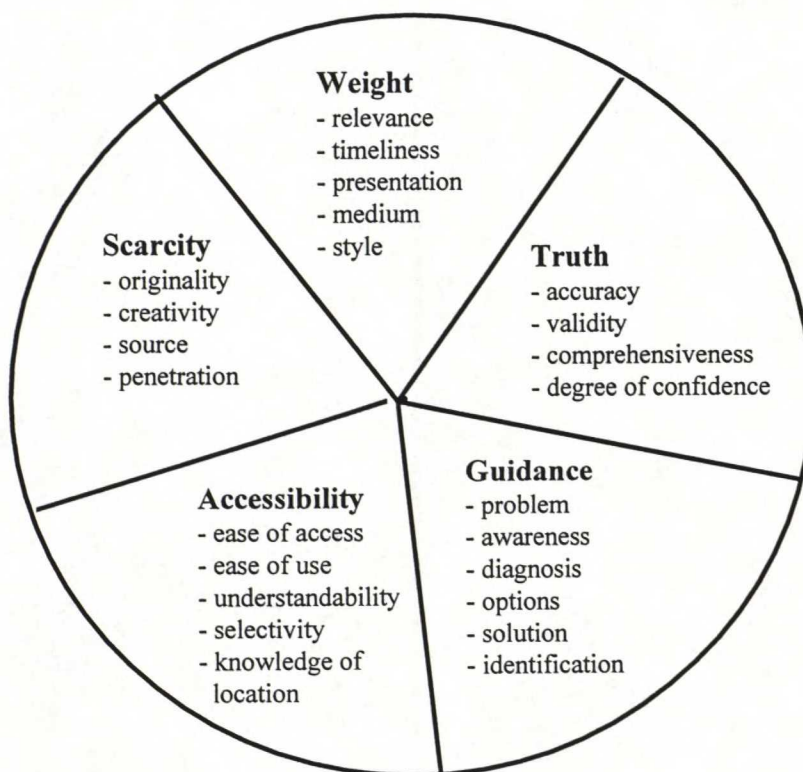
Becoming a trusted partner of a customer is the key of maintaining these kind of relationships and only by providing **valuable content** can a vendor become a trusted partner. Pro-activity is one example of this kind of content, it is the ability to use the extranet to provide the customer specific offers that match his buying

patterns. Personalised service strategies were in the past achievable only with key accounts but with the help of technology they are now possible for every customer. (Bloch et al., 1996, 7)

Model of Information Value

There is a strong body of opinion that **the value of information, and by implication the value of the processes that create it, can only really be measured in terms of the benefit obtained from its use** (Simpson and Prusak, 1995, 414). The value of information is a very relevant concept when keeping in mind the purpose of this study and therefore, the model that helps in analysing the value of information is presented in the following.

FIGURE 11. ADDED VALUE TO INFORMATION. SOURCE: SIMPSON AND PRUSAK, 1995.



Simpson and Prusak (1995) present a model for assessing added value to information that professionals within an organisation use. The model has five attributes: **truth, scarcity, guidance, accessibility and weight**. Truth is the degree of confidence that the user places in information acquired and probably the most obvious attribute that is required from information by professionals. Scarcity means the value of information which is new or is not freely available to competitor organisations or other potential users. Guidance is the extent to which information points the way to what action needs to be taken in a certain situation or set of circumstances. Accessibility attribute explains the availability of information to its potential users when needed and in form which they can use. Last, weight is an indicator of how seriously the recipient treats the information; is he ready to act upon it or not. (Simpson and Prusak, 1995, 416-417)

Truth, scarcity, guidance and weight are essentially attributes of information perceived by professionals related to the actual content of information. Truth illustrates the value of information and consists of aspects such as accuracy, validity, comprehensiveness and the degree of confidence. This is of course an important element in any kind of information, that is both in entertaining and in professional. On the other hand, guidance and scarcity illustrate better the individual information needs of different industries and professionals working within different functions in a company, since guidance relates to information's ability to contribute to actual problem solving and decision making, and scarcity to the aspect that information which is not freely available for everybody can be a competitive advantage. Weight is most concretely an indicator of a professional's perception of information value, since it determines if the person is going to act upon that information or not. Therefore, weight combines the other content related attributes into one that determines not only the value but also a possible impact of information on professional's actions. Ease of use of information and ease of access to information are the most relevant aspects of accessibility attribute of the model. These information attributes are summarised in figure 11.

Extranets can enhance value to information in every dimension of the model in figure 11. Extranet type of interorganisational system requires trust and co-operative work to be done among the buyer and the seller. It can be assumed that it is not in the seller's best interest to give false information and that is why the buyer can count on the information he receives to be true. An important point when considering success of extranet service is that **information must be accurate and true**, otherwise extranet will not get any users. Scarcity dimension, on the other hand, is enhanced with extranet because each customer has a unique profile of his own and when entering the service, the customer profile determines the information which he can access and this **information is in a sense tailored**. In addition, extranets can offer even better guidance when bandwidth limitations are overcome since then can for example tailored repair videos for products be presented thorough the network (guidance is related to the extent to which the information contributes to actual problem solving), nowadays the **guidance attribute can be fostered with case examples and frequently asked questions - articles**. Accessibility means the ease of use of information and the ease of accessing the information. **Extranet is available 24 hours a day, 365 days a year**. If the people in the customer organisations have knowledge to use the system, they are able to seek service and information whenever they want. Extranet can also enhance the weight of information since the whole solution is based on long term relationship. The buyer and the seller are both valuable to each other and when trust exists between partners, the information that the seller offers, enjoys more weight than the information from unknown supplier.

In business-to-business extranet arrangements the security of the network can be guaranteed better than in consumer oriented public networks such as Internet. When working through an extranet, a company knows the other side's technology base, connectivity and response time. Also a clear benefit of extranet compared to market based approaches is that the vendor avoids the difficulties related to identity recognition and credit worthiness. The seller already knows the buying

history of the client and can therefore trust on the client's ability to make the payments on time and also on the identity of the client because of more a proprietary nature of the network. However, while a more personal focus is a clear benefit of extranet, it might also be a hindrance. Consumers and companies are concerned about their privacy and especially companies realise that there might be drawbacks in engaging to only one supplier. (Row, 1997, 4-5)

Figure 12 summarises previous discussion on primary benefits of well implemented extranet service:

FIGURE 12. SUMMARY OF EXTRANET BENEFITS.

Benefits for partners:

- ❖ Wide availability of product, price, logistics, organisational etc. information
- ❖ Easy to access and easy to use system
- ❖ Speed of the system
- ❖ Security

Benefits for vendor:

- ❖ Better differentiation and image
- ❖ Cost savings due to centralisation of information
- ❖ Easy identification of users
- ❖ Possibility to gain feedback easier

Another aspect that may have influence on extranet exploitation, is the level of technological knowledge. This level varies widely among organisations and high technology vendors cannot assume that every customer is willing to adapt to electronic approaches despite of the benefits. Cavaye (1995) describes this situation by introducing Sponsor-Adopter Gap. According to the theory typical Sponsor (vendor) is IT aware, recognises IT potential, requires no financial

justification and is prepared to wait for benefits. On the other hand, typical adopter (customer) is not IT aware, needs convincing of IOS potential, uses cost/benefit analysis and requires immediate, potential benefit. So, there definitely is a gap. Cavaye also argues that adopters tend to learn from each other and therefore it is important to treat seriously this gap especially with first extranet partners. Peers have similar problems and organisations are more easily convinced by recommendations from peers than sales talks from sponsors. (Cavaye, 1995, 88-95)

Summary of Chapter Three

Chapter three began with introducing approaches to electronic commerce presented in interorganisational systems theory. When electronic commerce is exploited in existing business-to-business relationships with existing partners, electronic hierarchies, such as extranets, are likely to emerge. The question of why would a partner choose extranet as preferred information search and reception medium, can only be explained with additional benefits that extranet offers compared to previous systems. The benefits occurring for partners from extranet use are of primary interest in this study, but of course the seller gains from extranet use as well. The possible partner benefits include: wide availability of accurate information (availability, truth), information is tailored to different partner groups (scarcity), system can be accessed and used easily 24 h a day, information guides and helps (guidance) and last, information is relevant and presented well graphically (weight).

4. THEORETICAL FRAMEWORK OF THE STUDY

The conceptual framework explains, either graphically or in narrative form the main things to be studied -the key factors, constructs and variables- and the presumed relationships among them (Miles & Huberman, 1994, 18). Thus, the theoretical framework summarises the theoretical elements of the study and gives theoretical answer to research question.

Due to the relative newness of extranet technology and internet-based business-to-business communication and commerce, only few relevant theories that this study can build on exist. Thus, some concepts such as value system, relationships and networks that are presented earlier in this study mainly contribute to the understanding of the environment to which extranet is introduced and also to its usefulness in general. Thus, they do not directly construct a theoretical answer to the main research question: why does a channel partner choose extranet as a preferred way to search for and receive information from the seller?

These elements, however, are essential in understanding why extranet phenomenon is worth examining. Chapter two introduced the players of this study and relationships between them. Without existing relationships with channel members, there would be no possibility to implement an extranet service. That is the primary reason for investigation of relationships in the theoretical part of this study. **Relationships offer a context and atmosphere for information (and other) exchange and information exchange in turn has powerful influence on the relationship development.** Chapter three discussed electronic commerce approaches, value formation, extranet benefits to different players and finally provided theoretical answer to the main research question. Electronic communication and especially **extranet offers partners additional benefits compared to previous systems of receiving and searching for information and these benefits are proposed to be the main reason for choosing and using**

extranet.

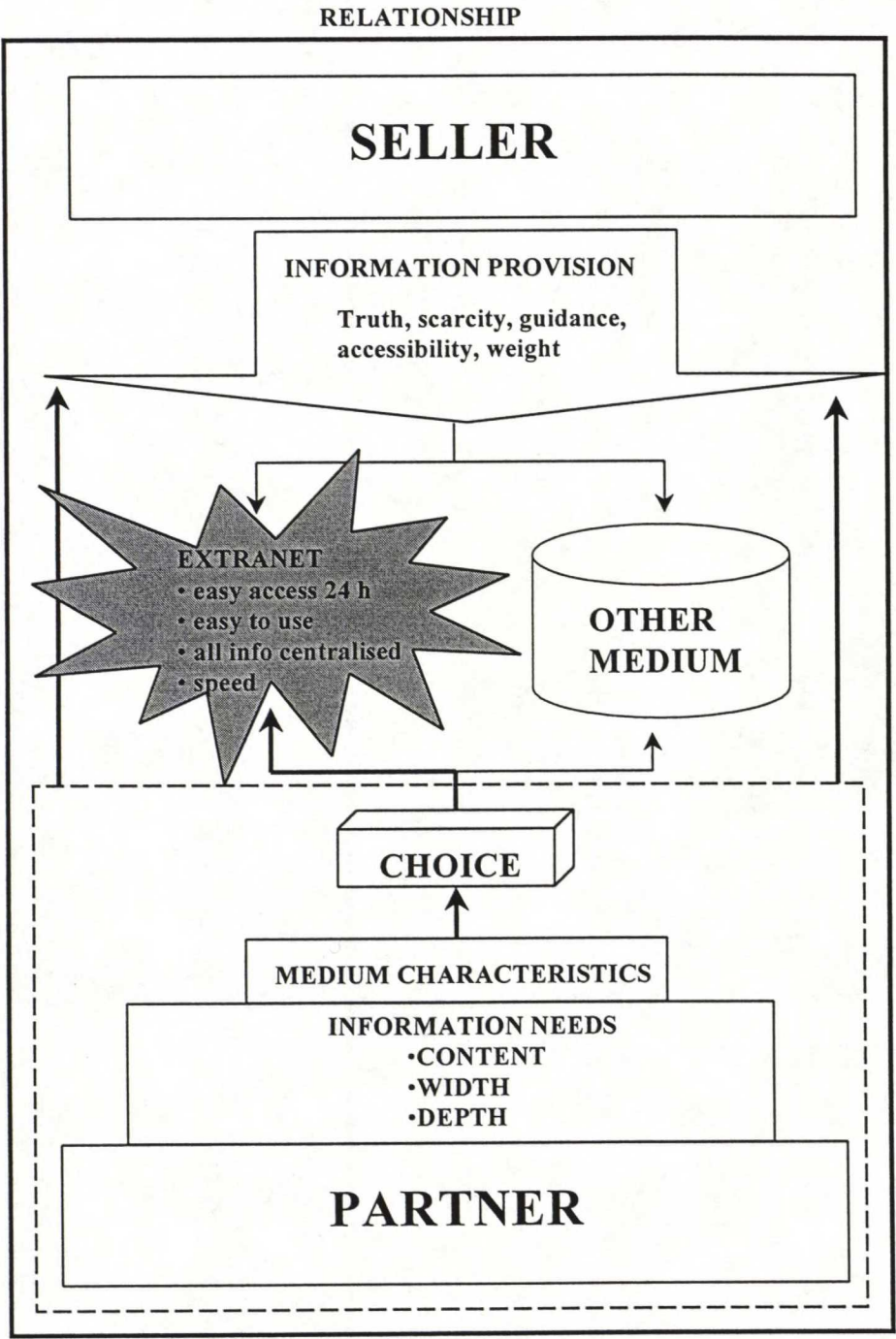
The emphasis of this study is on determination of why would a channel partner choose extranet as preferred source of information search and reception. It is assumed that information needs and medium characteristics determine the medium choice. The partner and his needs are, or at least should be, in key position when seller sets up a new way of delivering information. If the partner experiences real benefits from the extranet service use, he will use it and the service is feasible to set up. It is important to note that even though the information delivery is seen both in the model in figure 13 and in this study mostly seller originated, the partner is not only an information receiver but an active information seeker. Thus, the seller must understand its partners' information needs since they determine the content, width and depth of information provision as well as the medium through which seller must communicate. **The value of extranet (the reason to choose it) for channel partner rises from two facts: the ability of extranet information content, width and depth to fulfil the partner's information needs and the medium characteristics that make partners choose extranet as preferred information source.** This is illustrated in Figure 13.

The model in figure 13 summarises the key concepts and their relationships presented earlier in this study: relationships as context to extranet, buyer-seller information exchange, medium characteristics of extranets and characteristics of valuable information and partner information needs. The model also aims to conceptualise the order of tasks and their interrelation when introducing an electronic communication system, in this case an extranet, into channel communication:

- *Importance of beginning extranet introduction with thorough partner information need clarification***
- *Content, width and depth of needed information are variables that construct aggregate partner information needs***

- *Different mediums have different characteristics and they as well as the information needs have strong influence on medium choice*
- *Extranet service has some medium characteristics that makes it superior to other mediums when delivering certain type of information*
- *Clarification of partner information needs and preferred delivery and search mediums must influence the information provision decisions of the seller*

FIGURE 13. THEORETICAL FRAMEWORK: INFORMATION NEEDS AND MEDIUM CHARACTERISTICS HAVE AN INFLUENCE ON MEDIUM CHOICE OF A CHANNEL PARTNER.



5. METHODOLOGY

Traditionally there have been two dominant methodological research approaches: quantitative and qualitative methods. Quantitative methods use standardised methods that facilitate comparison and statistical aggregation of the data. The categories to be studied are to be set advance. Quantitative methods are useful in making generalisations, the size of the sample versus the size of the total population is an important factor when assessing the evidence. On the other hands qualitative methods permit the researcher to study selected issues, cases or events in depth and detail. (Hytti, 1996, 9)

The most serious and central difficulty in the use of qualitative data is that methods of analysis are not well formulated. For quantitative data, there are clear conventions that researcher can use. When analysing qualitative data, the problem of confidence in findings exists because of difficulty of qualitative data analysis. (Miles&Huberman, 1994, 2)

Eisenhardt sees combination of qualitative and quantitative data highly synergistic in case studies. Quantitative evidence can indicate relationships that may not be salient to the researcher. It can also keep researchers from being carried away by vivid, but false, impressions in qualitative data. The qualitative data are useful for understanding the rationale or theory underlying relationships revealed in quantitative data and it may suggest directly theory which then can be strengthened by quantitative support. (Eisenhardt, 1989, 37)

The empirical investigation in this study combines quantitative and qualitative data. The quantitative elements are important in quantifying the current situation of information delivery of the case company, importance of different information categories and preferred delivery mediums related to information categories. The amount of different information categories that the interviewees were asked to

evaluate was quite extensive and therefore a quantitative method was chosen to manage in this task. Ultimately this study is, however, about value of extranet and partner value perceptions were sought with qualitative orientation since value perceptions are difficult to quantify and must ultimately be sought by other means.

5.1 Case Methodology and Design

5.1.1 Justification of the Method

We can identify some situations in which all research strategies might be relevant and other situations in which two strategies might be considered equally attractive. We also can use more than one strategy in any given study. Even though the various research elements are not mutually exclusive, we can identify some situations in which a specific strategy has a distinct advantage. For the case study, this is when "how" and "why" question is being asked about a contemporary set of events over which the investigator has little or no control. (Yin, 1994, 9)

The case study was chosen as methodological approach since the nature of main research question is a why question (why does a partner choose extranet as preferred way to search for and receive information), and also because the new and unexplored nature of extranet technology examined.

Case studies can be exploratory, explanatory or descriptive. Exploratory case studies attempt to explore the reasons for a particular phenomenon and to generate ideas and hypotheses for empirical testing (Hytti, 1996, 9). Explanatory case study attempts to explain the reasons for observed phenomenon and theory is used to understand and explain the specific case and observations, theory is useful when if it is able to provide convincing explanations for the observations (Hytti, 1996, 9). Descriptive case studies describe the actual, existing situation which may be useful in determining the gap between theory and phenomenon (Hytti, 1996, 9). This case study **contains all mentioned elements: firstly, this study attempts to**

describe the information needs and preferred information delivery and search mediums of partners. Secondly, this study attempts to explore the reasons for extranet use via partner benefit perceptions and thirdly, also explain these reasons, why are certain benefits are beneficial. This study is not totally a causal one because the author does not address all factors affecting partner's extranet choice. Extranet benefits are of interest in this study and they heavily contribute to the partner's choice but also other factors, such as individual partner characteristics and relationship characteristics, which are out of this study's scope can be presumed to have influence on extranet choice. Neither is this study totally exploratory because some of the benefits are all ready known, however, new benefits in addition to ones already presented in theoretical part were hoped to emerge and in that sense this study is exploratory indeed. Descriptive elements were included to the study because the author presumed they would contribute to the understanding of what kind of information could be mediated through extranet. This knowledge is important when determining how extranet as a medium can enhance value of this needed information.

5.1.2 Choice of Case Company

Hewlett Packard (HP) designs, manufactures and services products and systems for measurement, computation and communications. The business purpose of the company is to create information products that accelerate the advancement of knowledge and improve the effectiveness of people and organisations. The company's products and services are used in industry, business, engineering, science, medicine and education world wide. In 1996 Hewlett Packard was No. 16 on the Fortune 500 list of the largest U.S. corporations and had net revenue of \$38.4 billion. The company employs 133 000 people and operates in more than 120 countries. More than 55 percent of its business in generated outside United States, more than two thirds of that in Europe.

The case company, Hewlett Packard Finland, was chosen because the author felt

that the case company should be one that is currently building an extranet service. By examining the information needs and medium characteristics the author could actually contribute to extranet information provision decisions of the company and the ideas could be tested in a real life context. Hewlett Packard has three extranet pilots going on in Europe and Hewlett Packard Finland is one of them. The lessons learned by HP in Finland and other pilot countries will be applied to other European countries when extranets are introduced to channel communication there.

Thus, this study is a **single-case study**. The primary level of analysis due to the nature of research question is the partner level of the case company that consists of various types of organisations. Implications that the partner level perceptions should have on the company level decision-making are dealt with when recommendations and managerial implications are made, but the partner level is the major interest point within the case company. This brings along to this study one more characteristic of case studies: case studies can employ an **embedded design**, that is, they can involve multiple levels of analysis (Yin, 1994, 42). The challenge of embedded design is in returning the results of subunit level to larger unit of analysis (Yin, 1994, 44). As mentioned earlier, this study attempts to clarify the partner level perceptions so that better decisions can be made and information quality in extranet service increased.

5.1.3 Operationalisation of Key Concepts

The determination of extranet value for channel partners, or why does a partner choose extranet as preferred medium to search for and receive information, is proposed to be based on two key concepts: **information needs** of channel partners and **medium characteristics** that strengthen the value of needed information. In reseller and dealer interviews information needs were measured with a table in which the interviewees were asked to evaluate the importance of different information categories for them. They were also asked in which form would they

like to receive or search for this information (form choices included online, electronic mail, CD-rom or diskette, fax, paper and personal contact). Medium characteristics that strengthen the value of information, thus the value of extranet, were sought with open-ended questions presented after the table. In wholesaler interviews the same matters were sought but questions were more open-ended of their nature. In addition, answers to questions why certain extranet benefits are perceived beneficial were sought.

5.1.4 Quality of Case Study: Validity and Reliability

Three principles of case study research increase the quality of case study research by increasing its **construct validity**: (1) use of multiple sources of evidence, (2) creating a case study database and (3) maintaining a chain of evidence (Yin, 1994, 79). To meet the test of construct validity requires two things: 1) selection of specific types of changes that are to be studied 2) demonstration that the selected measures of these changes do indeed reflect the specific types of changes that have been selected (Yin, 1994, 43).

In this study partner information needs and medium characteristics are key concepts which explain extranet choice and use. They are mainly measured by interviewing different partners about their information needs, preferred mediums, extranet characteristics and their importance. **Multiple sources of evidence were used in the beginning of the study, when the author examined the current state of information provision for partners in a case company as well as to familiarise herself to the problematics related to case company channel structure and to existing corporate plans how extranet project should be conducted (this material is classified and can therefore not be shown in the appendixes). Multiple sources of evidence were also useful when analysing implications of partner level perceptions on the company level.** Thus memos and other material related to the European wide extranet project were examined and HP plans were compared and evaluated against partners' opinions. The chain

of evidence refers to the process where conclusions made can be traced back to the empirical facts they were based on. **In this study the author aims to present as clearly as possible the steps taken between data collection and conclusion making in order to maintain chain of evidence as clear as possible to the reader.**

The second test that addresses the quality of case study is **internal validity**. Internal validity is a concern only for causal case studies, in which an investigator is trying to determine whether event x led to y. Extranet benefits are of interest in this study and they heavily contribute to the partner's extranet choice. However, also other factors, such as individual partner characteristics and relationship characteristics, which are out of this study's scope may have influence on extranet choice. Thus, internal validity is not of major concern in this study since medium characteristics (extranet benefits) are one reason for partner's extranet choice (X1) and it must be noted that also some other factors may influence extranet choice and therefore, a total causal relation between benefits and extranet choice cannot be established. Internal validity is increased in this study by using the analytic tactic of pattern matching in data analysis phase. (Yin, 1994, 35)

The third test, **external validity**, deals with the problem of knowing whether a study's findings are generalizable beyond the immediate case study (Yin, 1994, 36). **The findings of this study are generalisable to organisations marketing similar products through similar channel structures.** The nature of case company's product offerings has powerful influence on partner information needs and those findings are not so generalizable as findings related to extranet medium benefit perceptions. **In addition, extranet offers almost identical benefits as delivery medium to every company in every industry, the nature of particular industry information then determines if the total value of information exchanged is increased through use of extranet. Therefore, the findings related extranet to benefits are generalizable to large extent which increases the external validity of this study.**

The fourth test related to the quality of case study is **reliability**. The objective is to be sure that if a later investigator followed exactly the same set of procedures as described by earlier investigator and conducted the same case study all over again, the later investigator should arrive at the same findings and conclusions (Yin, 1994, 36). To achieve maximum rate of reliability, the case study must make the steps as operational as possible and carefully document the steps taken between data collection and conclusions making. In addition to careful documentation of findings in chapter six, the reliability of the study is increased by the relatively large amount of interviewees and homogeneity of the answers obtained. The author has tried to make the chain from original interviewee answers to respective findings as clear as possible: preferred characteristics -tables are presented in interview order indicating clearly answers given by each single interviewee and extranet benefit findings are based on answers given to more than one question (See Appendix) to mention few.

5.2 Data Collection

5.2.1 Pilot Surveys and Interviewee Selection

Data was collected by interviewing together 45 resellers, dealers and wholesalers of the case company. All interviews were conducted via telephone. The telephone interview was conducted with the help two question sets (See Appendix), one for resellers and dealers and the other for wholesalers. The reseller and dealer question set was tested with three partners. After the first pilot interview some modifications were made to the questions set: the table testing information needs and preferred mediums was shortened to contain three columns instead of four since the interviewee commented the table to be too long. During second and third pilot interviews nothing new emerged and no more alterations to the question set were made.

The interviewee selection was performed by two company representatives: a marketing manager responsible for channel training and a unix product manager. 17 interviewees represented channel partners buying mainly computer products, 17 partners were computer systems clients and 11 represented wholesalers that mediate goods to resellers and dealers. Thus, the researcher had no possibility to influence the interviewee selection process. However, according to company representatives all selected interviewees were seen to be potential users of extranet service. Computer systems clients were all users of Partnership Online, web-based service for channel partners. Thus, the sample in this study can be called **purposive**. The selected interviewees were presumed to have motivation to answer that influenced the interviewee selection. The interviewee motivation was essential to a successful interview since the interview took 20-30 minutes and required also preparation from the interviewees beforehand.

From the partner organisations buying and mediating computer products only one person was interviewed. Usually this person was in managing position. Most of these organisations were small in size (turnover FIM 10-100 million) and it was assumed that in these types of small organisations all employees were able to determine information needs and preferred mediums of their organisation as well as the constructs of extranet value. From some partner organisations buying and mediating computer systems products more than one person was interviewed. This was done when the task of the interviewees differed so much from each other that their information needs and medium preferences were also presumed to differ. Usually these organisations were large companies with their turnover over FIM 1 billion. From each wholesaler organisation, three persons were interviewed. The tasks of interviewees representing wholesaler organisations differed from each other and this was presumed to influence their needs and perceptions significantly. It must be noted that the wholesaler question set and the reseller and dealer question set differed as well from each other. The questions were a little different because the wholesaler's business is to know the resellers and dealers and thus, they were presumed to contribute to better understanding of reseller and dealer

needs in addition to their own. To get more informative answers, the wholesaler interviewees were given more freedom to answer.

The background of interviewees representing partners that buy computer products was as follows:

- sales: 1 person
- technical: 3 persons
- owner/manager: 12 persons
- administration: 1 person.

The background of interviewees representing computer systems partners was as follows:

- general manager: 3 persons
- product manager: 3 persons
- sales or marketing manager: 7 persons
- systems manager or systems specialist: 1 person
- logistics co-ordinator: 1 person
- development manager: 2 persons.

The background of interviewees representing wholesalers was as follows:

- marketing or sales person: 1 person
- marketing and sales manager: 2 persons
- chief executive officer: 1
- product manager: 6 persons
- systems specialist: 1 person.

5.2.2 Interview Situation

All telephone interviews were conducted in Finnish since all interviewees were native Finns. The question set was mailed or sent by fax beforehand to interviewees and they were contacted to set up a suitable interview time. In the

cover letter each receiver was asked to briefly prepare for the interview. The duration of telephone interviews was 15 to 30 minutes depending on the preparation work that each interviewee had done beforehand. However, it required a significant amount of work to get one interview: the researcher estimated that it took 2-3 hours to contact one partner and to get an interview since partners spend much of their time in client engagements.

The reseller and dealer telephone interview consisted of three parts: first, general question were asked related to partner company's business and ability to use internet based services. Then the interviewee was asked to evaluate the current information he received from HP, its importance to him and the preferred medium to receive this information. **Importance was measured by interval scale and preferred mediums with nominal scale** (see chapter six for detailed information on options given). The researcher filled up a table while interviewing. The table presented 27 information categories (See Appendix). After the table, the interviewee was asked open-ended questions trying to clarify the constructs of extranet value to each interviewee. The wholesaler telephone interview consisted of questions that were more open-ended, but ultimately same things (information needs and preferred mediums) were sought. In addition, the reasons for certain information needs and extranet benefits as well as interpretation to reseller and dealer answers were sought. Additional purpose of the more qualitative oriented wholesaler interviews was to generate knowledge on electronic communication between resellers and dealers and wholesalers and its impact on the information exchange between them.

5.2.3 Research Schedule and Data Verification

The reseller and dealer interviews were conducted in September and October, totally this process took time one and half months. Wholesaler interviews were started in the end of October, when reseller and dealer interviews were finished.

Data verification ensures that the empirical material collected is collected from right persons and ultimately provides an answer to the research question(s). In this study data was collected from channel partners of the case company who are the target group and potential users of extranet.

5.3 Data Analysis

Case study analysis should start with a general analytic strategy which yields the priorities what to analyse and why. Within such strategy one of four dominant analytic techniques should be used. (Yin, 1994, 102)

The ultimate goal of data analysis is to treat the evidence fairly, to produce compelling analytic conclusions and to rule out alternative interpretations (Yin, 1994, 103). This study relies on theoretical propositions as general analytic strategy. The original objectives and design of the case study are presumably based on propositions which have reflected a set of research questions, reviews of literature and new insights (Yin, 1994, 103). So is the case in this study, propositions on extranet benefits are the ultimate reason for this study and they have influenced the research question formation, literature review and empirical approaches. Clearly, the propositions help to focus attention on certain data and to ignore other data (Yin, 1994, 104). The dominant analytic technique used in data analysis of this case study is pattern-matching which is one of the most desirable strategies to use in case study analysis. **Pattern-matching** logic compares an empirically based pattern with a predicted one and if pattern coincide, the results can help a case study strengthen its internal validity. (Yin, 1994, p 104)

In chapter six the obtained research data will be analysed by interviewee groups: thus, findings related to computer products partners, systems partners and wholesalers are dealt separately from each other. Comparisons are made both within these subchapters and also in the comparison chapter.

6. MAIN INFORMATION NEEDS AND EXTRANET BENEFITS FOR COMPUTER ORGANISATION

The main research question this study aims to answer is: **why does a channel partner choose extranet as a preferred way to search for and receive information from the seller?** The subquestions, which help in constructing a picture of extranet's value for partners, are following: what are the main information needs of channel partners and in what form do they want to receive the information they need? Are partners technically able to use extranet services? What kind of information do the partners expect to receive from extranet? What kind of information delivery improvements do they expect to get from the use of extranet? How do the partners value different extranet characteristics like 24 hour availability, easy-to-use user interface, graphics and speed? How important do the partners see the role of electronic communication in future interaction with the seller?

In this chapter these questions will be answered based on the research data. The data was collected from resellers, dealers and wholesalers of Hewlett Packard Finland as explained more thoroughly in earlier chapter. However, since the three interviewee groups differ from each other, the findings related to each group are also presented separately. The answers of partners buying and mediating computer products (17 interviewees) are presented first and after that, the answers of partners buying and mediating computer systems (17 interviewees) are presented and compared to previous ones. The wholesaler interviewees answered to slightly different set of questions than resellers and dealers and therefore their answers are dealt separately from others. Thus, this chapter has three subchapters that present the answers of different target groups to research questions and in fourth one, some comparisons between these groups are made.

Reseller and dealer interviewees were asked to describe their information needs

and preferred information search and delivery mediums by presenting them a table with 27 different information categories (see Appendix). **Each interviewee indicated the importance of each information category to their business by giving a number from 1 to 4 as an answer (1 not important, 4 very important), thus, the scale used in this question was interval scale.** Each interviewee also gave a number answer to question through which medium would they like to receive (or search for) this information (1=online, 2=electronic mail, 3=diskette, CD, 4=fax, 5=paper, 6=telephone, personal contact), thus, the scale used in this question was nominal scale. The medium alternatives were given number codes to easen the data analysis task. Telephone/personal contact was presented as one alternative because both require human input and presence, in addition, personal contact is rarely used in delivering the type of information concerned in this study. If the interviewee could not answer to the question, question was not given a number. The numerical data was analysed with the help of Microsoft Excel. Other questions in a question set were of more open ended nature and the answers they provide to other research questions are dealt after information needs and preferred mediums.

6.1 Computer Products Partners

The main information needs and preferred mediums

Table 2 illustrates the importance of different information categories to computer products partners interviewed. The average of answers given to question: "How important is this information to you and your business?" is illustrated in the second column.

TABLE 2. IMPORTANCE AVERAGES OF 27 INFORMATION CATEGORIES GIVEN BY
COMPUTER PRODUCTS PARTNERS.

INFORMATION CATEGORIES	IMPORTANCE AVERAGE
availability of goods	4
delivery status	3.8
obsolete products	3.7
ordering	3.6
support services	3.6
price lists	3.6
product descriptions	3.5
service organisation descriptions	3.4
configuration tools	3.2
customer feedback	3.2
brochures	3.1
HP event calendar	3
marketing programs	3
sales tools	2.9
course descr. and timetables	2.9
course registr. and material ordering	2.9
demo equipment	2.9
brochure ordering	2.9
white papers	2.4
technical product information	2.4
promotion material	2.4
press releases	2.2
information on contracts and accounts	2.1
reference information	2.1
"chat box"	2.1
dealer contact information	2.1
info on industry solutions	2

As table 2 indicates, some information is clearly more important than other to interviewees. The author determined that in this study those information categories that have importance average greater or equal to 3 can be considered to be **important** and to describe the main information needs of partners. These categories are listed in first column of table 3. *The third column in table 3 indicates the preferred medium to receive this information by listing the mode,*

that is the number given most frequently as an answer to question in which form would the interviewees like to receive this particular information.

Interviewees were given following number options to answer: 1=online, 2=electronic mail, 3=diskette, CD, 4=fax, 5=paper, 6=telephone, personal contact. After receiving the number answers, the author counted the modes in each information category. The modes of most important information categories are listed in third column of figure 3.

At this point it is useful to remind the reader that computer products partners interviewed were mainly small and medium sized businesses and the person who represented the organisation was often in manager or owner position. It can be presumed that the position of the interviewee has brought strategic perspective to information needs and preferred mediums answers. If one now looks at the first column of table 3, one can see that the four most important information categories are all logistical information. Questions such as what goods are available, where is the order going, who makes sure that I do not mediate obsolete stuff to my own clients and how can I make my orders most efficiently at reasonable prices are questions of life and death to a small computer entrepreneur. This becomes very evident when one looks at the importance averages of different information categories.

The interviewees regarded online form best to deliver information on availability of goods, delivery situation, obsolete products, prices, marketing programs as well as to deliver product and service organisation descriptions, configuration tools, HP event calendar and to make orders. The personal contact was preferred in receiving support services and giving customer feedback. As many interviewees wanted their brochures on paper as in online form, thus mode was both 5 and 1.

TABLE 3. MOST IMPORTANT INFORMATION CATEGORIES AND RESPECTFUL PREFERRED MEDIUMS GIVEN BY COMPUTER PRODUCTS PARTNERS.

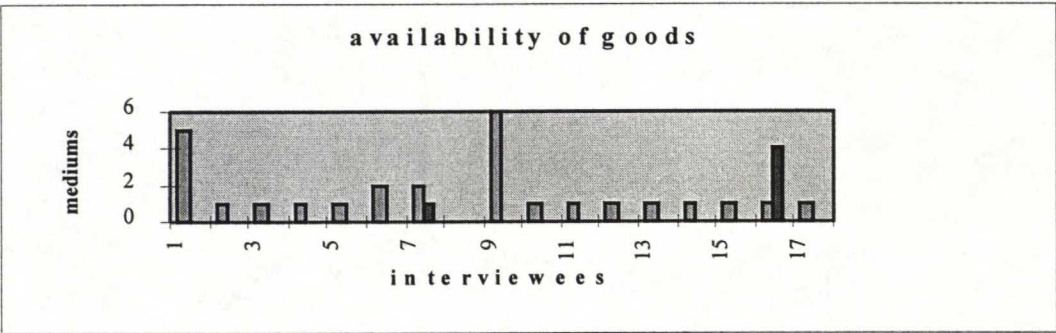
MOST IMPORTANT INFO	IMPORTANCE AVERAGE	PREFERRED MEDIUM (MODE)
1. availability of goods	4	1
2. delivery status	3.8	1
3. obsolete products	3.7	1
4. ordering	3.6	1
support services	3.6	6
price lists	3.6	1
5. product descriptions	3.5	1
6. service organisation		
descriptions	3.4	1
7. configuration tools	3.2	1
customer feedback	3.2	6
8. brochures	3.1	5 and 1
9. HP event calendar	3	1
marketing programs	3	1

It is essential to notice the wide acceptance of online form as the most preferred way to deliver important information. As discussed many times earlier in this study, online form has clear advantages in delivering important information. In theory and in practise it is possible for the customer know the same information almost instantly same time as supplier itself knows it. The customer is able to connect for example to extranet or other online service and to look for needed information himself without any help from supplier company's employee whose telephone line may be busy three days on the row.

The nature of mode as statistical variable must be kept in mind when the preferred medium results are concerned. In this case **mode** describes the number most frequently mentioned as an answer to question in which form would the interviewee like to receive the particular information. Thus, it could be that 9 out of 17 interviewees would indicate online as preferred form and that 8 out of those 17 would indicate personal contact as preferred form and yet, the mode would be

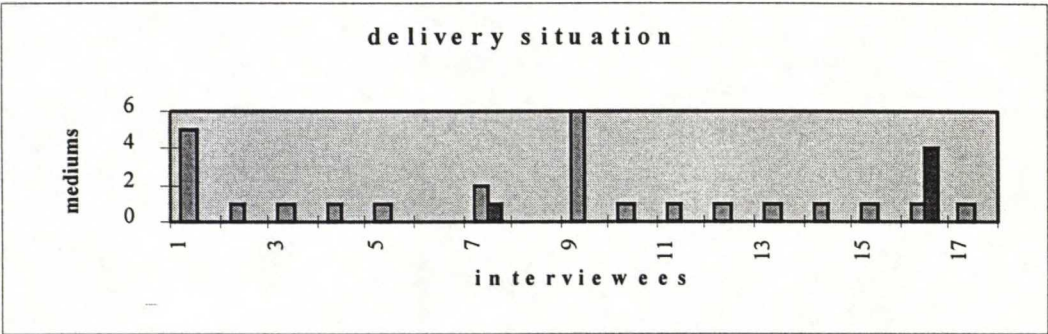
online. Therefore, the preferred mediums related to important information (information that has information average greater or equal to 3) are examined more thoroughly. In the following the preferred mediums related to each important information category indicated by interviewees are illustrated by pillar diagrams to get a more precise picture of preferred mediums and also of alternate mediums to preferred ones. If the interviewee has indicated two answers to preferred medium question, then the number given first is illustrated in grey and the number given second is illustrated in black (thus, some answers with two preferred mediums may indicate value order, but interviewees were not specifically asked to prioritise their choices).

TABLE 4. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON AVAILABILITY OF GOODS: COMPUTER PRODUCTS PARTNERS.



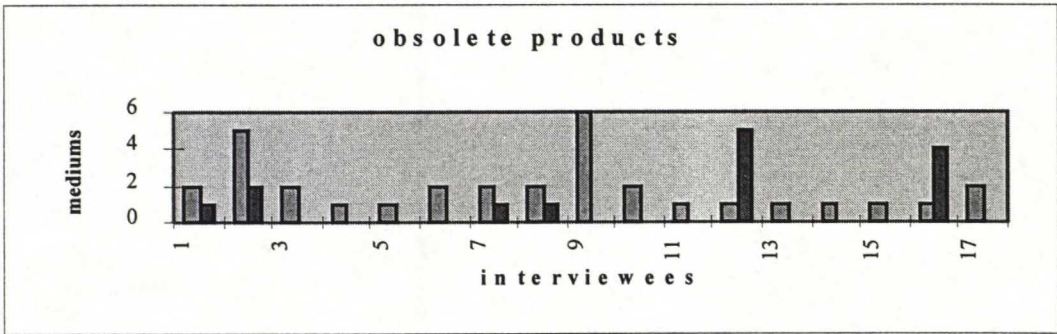
11 out of 17 computer products interviewees wanted to receive information on availability of goods online. 1 interviewee wanted this information both by e-mail and online and 1 both online and by fax. In addition, 1 preferred paper form and 1 fax. **Thus, most interviewees preferred the online form and there was no clear consensus on alternatives.**

TABLE 5. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON DELIVERY SITUATION: COMPUTER PRODUCTS PARTNERS.



11 out of 17 interviewees indicated that online form is the best to deliver information on delivery status of goods. 1 mentioned both online and fax and 1 both e-mail and online. 1 wanted this information solely by paper and 1 by fax. Thus, the preferred medium answers were largely similar among information on availability of goods and delivery situation: electronic format was preferred by majority.

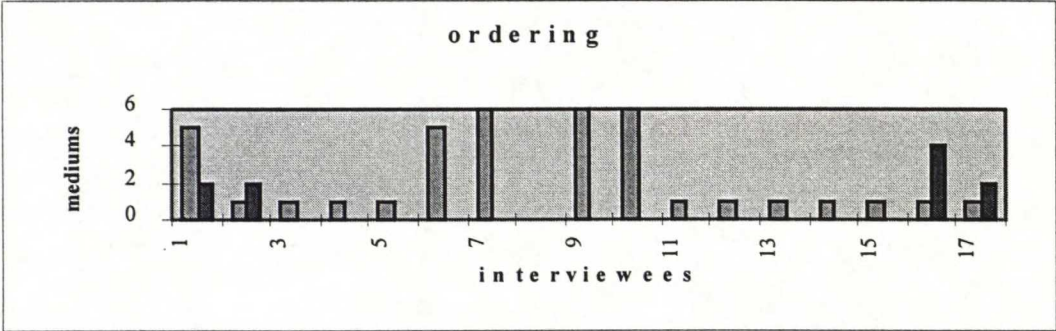
TABLE 6. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON OBSOLETE PRODUCTS: COMPUTER PRODUCTS PARTNERS.



In information on obsolete products -category the spread among preferred medium answers was great as figure above illustrates. 6 out of 17 interviewees preferred online form, 4 preferred e-mail and 3 both e-mail and online. 1 indicated both online and paper as preferred mediums and 1 both online and fax. 1 interviewee

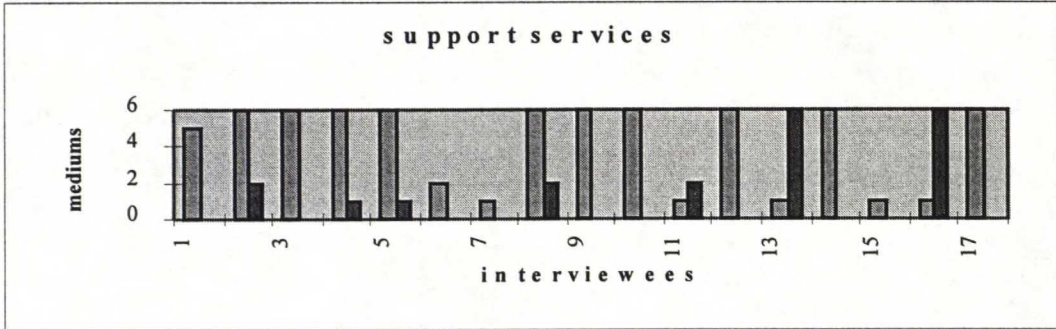
preferred personal contact. Thus, 13 out of 17 interviewees indicated that obsolete product information should be delivered electronically either online or by e-mail or by both these mediums.

TABLE 7. PREFERRED MEDIUMS TO MAKE ORDERS: COMPUTER PRODUCTS PARTNERS.



8 out of 17 interviewees want to be able to make orders online, 3 out of 17 want to do them in personal contact whereas 2 interviewees preferred both online and e-mail. 1 preferred paper, 1 both paper and e-mail and 1 both online and fax. 10 out of 17 indicated that they preferred either online or e-mail or combination of the two as the preferred way to make orders.

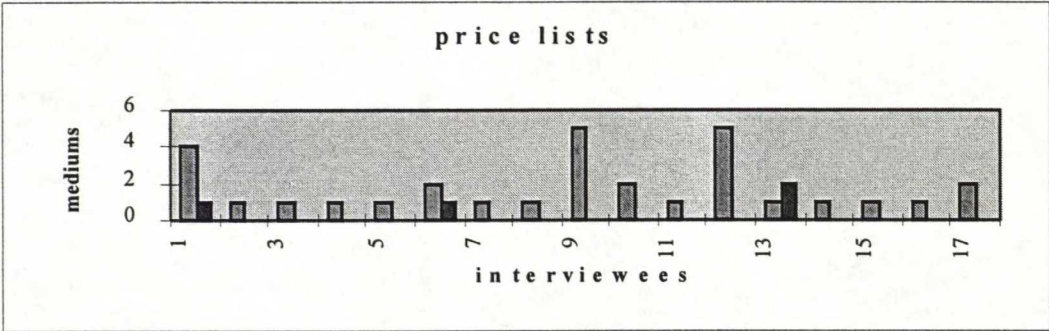
TABLE 8. PREFERRED MEDIUMS TO RECEIVE SUPPORT SERVICES: COMPUTER PRODUCTS PARTNERS.



6 interviewees out of 17 mentioned solely personal contact as preferred way to deliver support services, 4 interviewees mentioned both online and personal

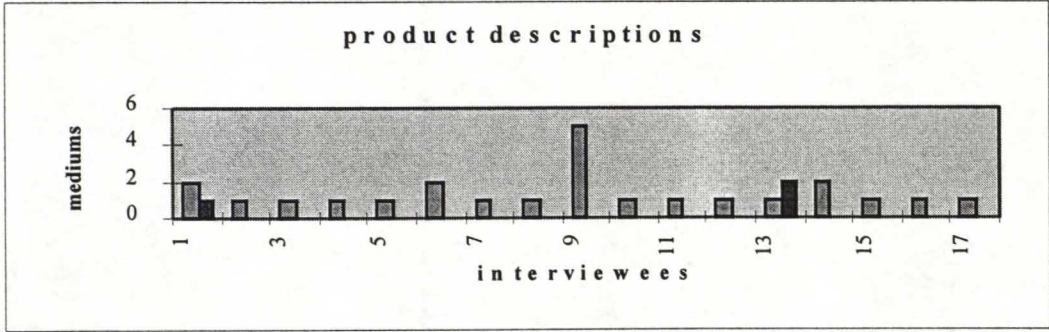
contact and 2 both e-mail and personal contact. 2 interviewees wanted support solely online, 1 by e-mail, 1 both by e-mail and online and 1 only by paper. **Thus, for these interviewees the strongest alternative to personal support services is online electronic support.**

TABLE 9. PREFERRED MEDIUMS TO RECEIVE PRICE LISTS: COMPUTER PRODUCTS PARTNERS.



10 interviewees out of 17 preferred online price lists, 2 wanted to receive price lists by e-mail and 2 both by e-mail and online. 1 indicated that both online and by fax would be ideal and 2 preferred to receive price lists in paper. **Electronic format (online or e-mail) was preferred by 14 interviewees out of 17.**

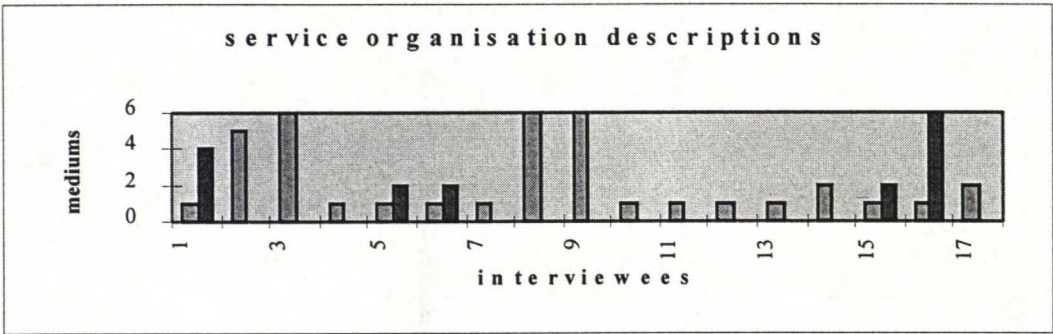
TABLE 10. PREFERRED MEDIUMS TO RECEIVE PRODUCT DESCRIPTIONS: COMPUTER PRODUCTS PARTNERS.



12 out of 17 interviewees preferred online form to get product descriptions, 2 mentioned both online and e-mail and 2 wanted them by e-mail. 1 interviewee

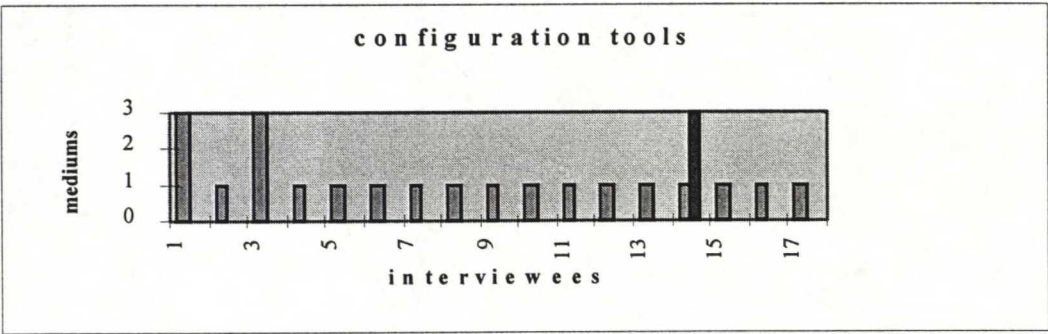
preferred paper format. Thus, 16 interviewees out of 17 preferred electronic format (online or e-mail).

TABLE 11. PREFERRED MEDIUMS TO RECEIVE SERVICE ORGANISATION DESCRIPTIONS: COMPUTER PRODUCTS PARTNERS.



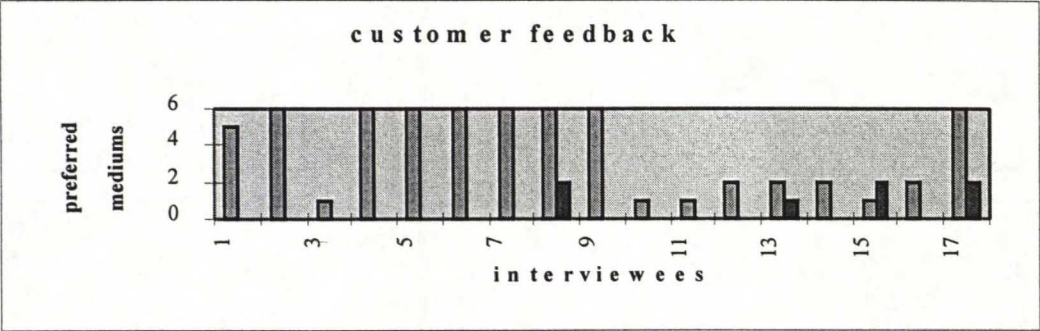
6 interviewees preferred the online format in service organisation descriptions, 2 wanted them by e-mail and 3 both online and by e-mail. 3 interviewees indicated that this kind of information should be delivered in personal contact, 1 mentioned both online and personal contact, 1 both online and by fax and 1 wanted them in paper format. Thus, electronic format (online or e-mail) was mentioned by 13 interviewees.

TABLE 12. PREFERRED MEDIUMS TO RECEIVE CONFIGURATION TOOLS: COMPUTER PRODUCTS PARTNERS.



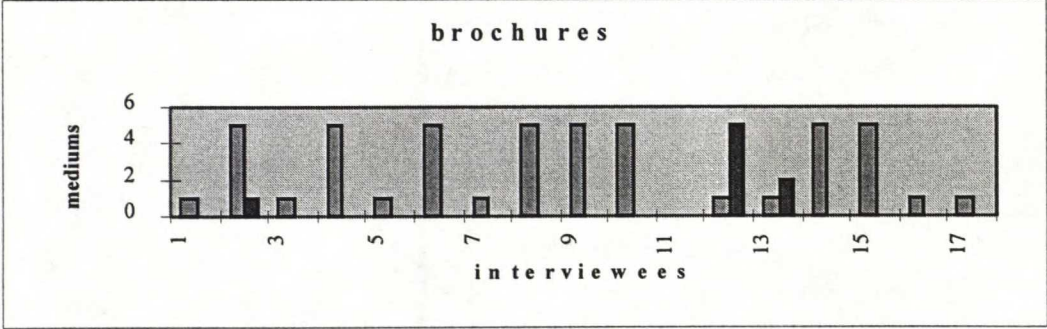
14 interviewees wanted to get configuration tools online from www-pages or extranet, 2 preferred diskette, 1 mentioned both.

TABLE 13. PREFERRED MEDIUMS TO GIVE FEEDBACK: COMPUTER PRODUCTS PARTNERS.



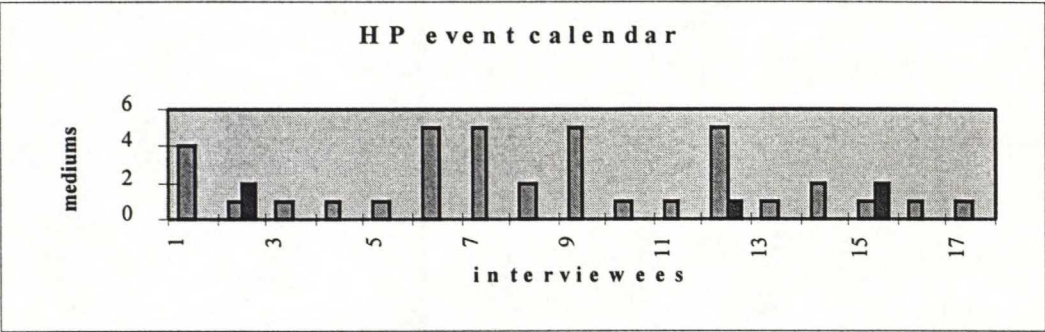
6 interviewees wanted to give feedback in personal contact, 2 interviewees both in personal contact and by e-mail, 3 by e-mail, 3 mentioned online, 2 both online and by e-mail and 1 by fax.

TABLE 14. PREFERRED MEDIUMS TO RECEIVE BROCHURES: COMPUTER PRODUCTS PARTNERS.



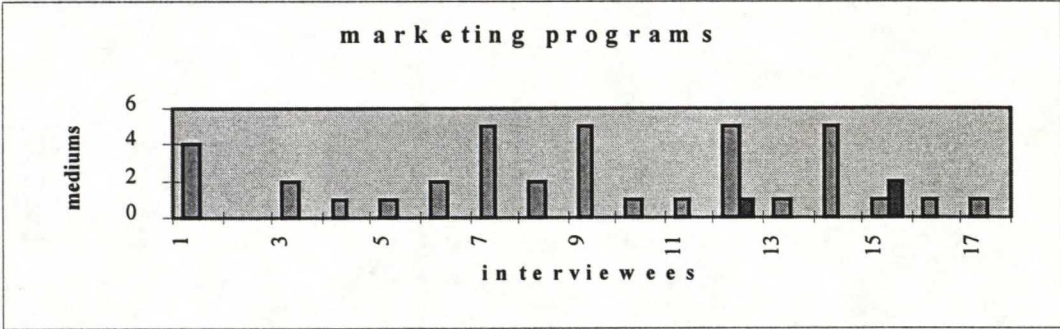
7 interviewees indicated that they preferred paper brochures, whereas 6 interviewees preferred online brochures. 2 wanted brochures both by paper and online and 1 both online and by e-mail. **Thus, there were as many interviewees that mentioned paper form as preferred medium as there were those that wanted their brochures online.**

TABLE 15. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON HP EVENTS: COMPUTER PRODUCTS PARTNERS.



8 interviewees wanted to receive information on HP events online, 2 by e-mail and 2 both online and by e-mail. 3 indicated that they preferred paper, 1 mentioned both online and paper and 1 wanted them by fax. Thus, **13 interviewees mentioned electronic form (online and e-mail) as preferred one to receive info on events.**

TABLE 16. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON MARKETING PROGRAMS: COMPUTER PRODUCTS PARTNERS.



7 interviewees preferred online format in receiving information on marketing programs, 3 preferred to receive it on paper and 3 by e-mail. 1 interviewee wanted this information by fax, 1 both on paper and online and 1 both online and e-mail. **13 interviewees mentioned electronic format (online or e-mail) as preferred**

one to receive info on marketing programs.

Ability to use Extranet Service

The interviewees were asked to describe with a few words how they exploit internet (and services it enables) in their own business: both within their own organisation and also in co-operation with customers and partners. From computer products partners 12 out of 17 interviewees indicated that they have a company intranet and all interviewees mentioned that they use electronic mail in their daily work. 13 out of 17 interviewees told that they have their own company www-pages and 4 out of 17 interviewees indicated that company www-pages were under construction.

Internet was used both to provide information and services to customers as well as to search for information for own business needs. Interviewees indicated that especially information on competitors and suppliers was sought from internet. Suppliers' pages were used to get product information, configuration and sales tools and information on prices. In interviewee companies' own www-pages their customers were mainly offered information on events and programs, electronic shopping possibilities and links to suppliers' (such as HP's) www-pages.

Based on the above mentioned results it can be presumed that these interviewee organisations are very well capable of adopting and using extranet service which is hardly surprising. The nature of the case company's business, computer products and systems, must be kept in mind when these findings are examined. People and organisations who are engaged in selling and mediating these kind of products, must be able to use computers and be receptive to new technologies. Thus, the inability to use extranet service cannot be considered as an obstacle to introducing it. The next question therefore is if these people **want** to use extranet or not and **why** would they like to/are likely to do so.

Extranet improvements and important characteristics

The interviewees were presented two open ended questions that aimed at clarifying if the interviewees actually thought that extranet service as a way to deliver online information would be beneficial to them and their business. In case they did, they were asked first why and then they were asked to list things that in their opinion create value for extranet/electronic communication service. The answers given by 17 computer product interviewees are tabulated in table 17. The logic of the table proceeds as follows: each time an interviewee mentioned a value category from the information value model by Simpson and Prusak (see page 47 of this study), the category gained one cross. The answers are tabulated in interview order, thus, column one is the first person interviewed and so on. Thus, each interviewee could give as many value statements as possible, some gave only one whereas others gave four. This affects the interpretation of the table results. The following percentages counted from the table do not reflect distribution of interviewees who were of that opinion. Instead, they reflect the percentage of same statements given by interviewees.

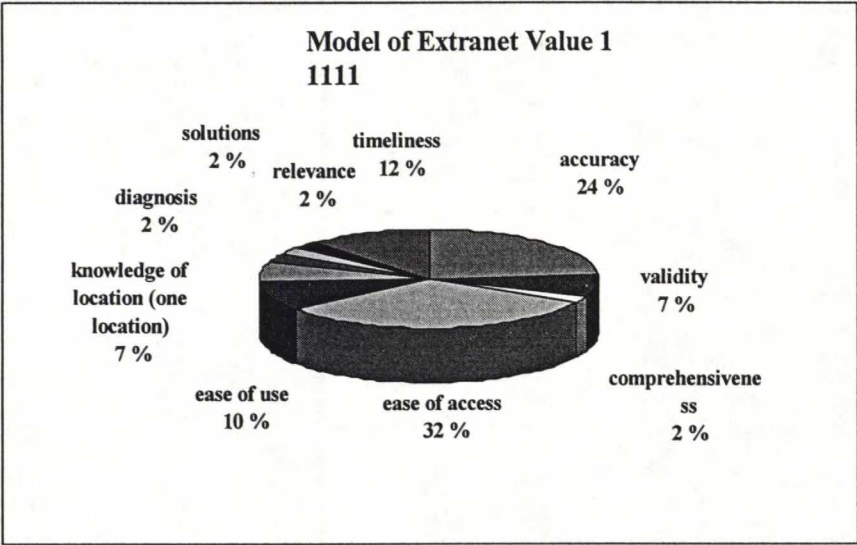
TABLE 17. VALUE OF EXTRANET FOR COMPUTER PRODUCTS PARTNERS
REFLECTED BY MODEL OF INFORMATION VALUE VARIABLES.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
TRUTH																	
accuracy	x			x	x			x			x	x	x		x	x	x
validity				x							x	x					
comprehensiveness											x						
degree of confidence																	
SCARCITY																	
originality																	
creativity																	
source																	
penetration																	
ACCESSIBILITY																	
ease of access (24 h)	x	x	x	x	x		x	x	x	x			x	x	x		x
ease of use	x	x	x			x											
understandability																	
selectivity																	
knowledge of location (one location)					x					x			x				
GUIDANCE																	
problem awareness																	
diagnosis			x														
options																	
solutions			x														
WEIGHT																	
relevance					x												
timeliness	x							x							x	x	x
presentation medium																	
style																	

The information value model has five dimensions: truth, scarcity, accessibility, guidance and weight that each consist of different characteristics. The distribution of interviewee answers among these characteristics are given a closer look later, but first some clarifications are presented so that the results are interpreted correctly. For example, truth dimension in information value model consists of

information characteristics such as accuracy, validity, comprehensiveness and degree of confidence and accessibility dimension of information consists of characteristics such as easy to access, easy to use, knowledge of location (one location), understandability and selectivity. In this study easy to access characteristic is interpreted in a way that in addition to easy access, information is also fast available. The knowledge of location (one location) -characteristic reflects statements such as: "To me it is essential that all information is centralised into one place where I can find everything I need".

FIGURE 14A. MODEL OF EXTRANET VALUE 1: COMPUTER PRODUCTS PARTNERS.

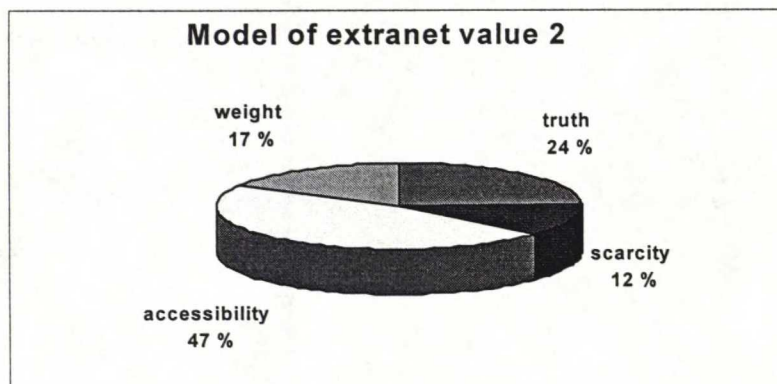


Thus, all computer products partners interviewed indicated that in their opinion extranet service would improve their information reception from the case company. Figure 14a (Model of extranet value 1) illustrates the characteristics distribution of extranet that created value for these interviewees. In order of importance the characteristics mentioned by interviewees were:

- ease of access
- accuracy
- timeliness
- ease of use
- knowledge of location (one location) and validity
- diagnosis, solutions, relevance and comprehensiveness

Figure 14b (Model of information value 2) illustrates the distribution of main contributors to extranet value for computer products partners. Thus, 48% of all interviewee statements indicated that **accessibility** component of information is an important contributor to extranet value and also to improvements that extranet offers. 33% of all interviewee statements indicated that **truth** component of information is also a contributor to extranet value and also to improvements that extranet offers. 14% of interviewee statements referred to importance of **weight** component of information as a source for extranet value and 5% referred to **guidance** component of information.

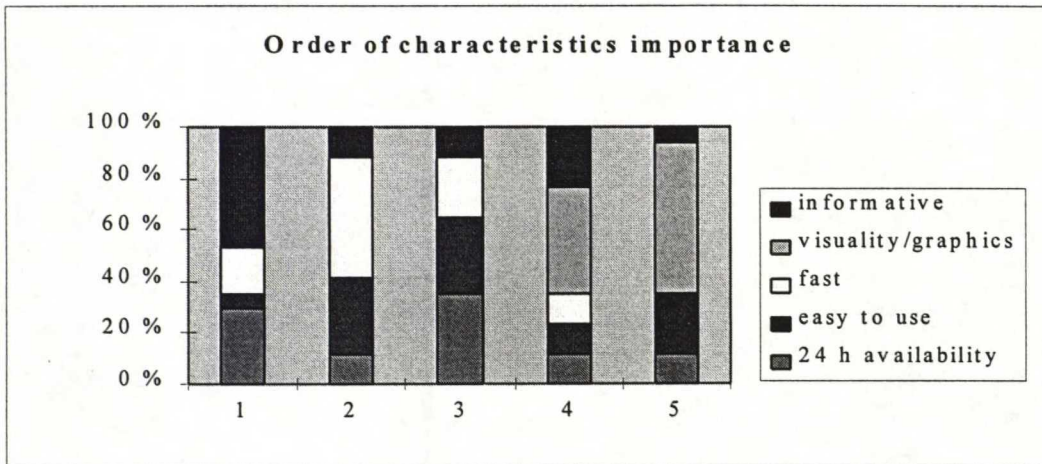
FIGURE 14B. MODEL OF EXTRANET VALUE 2: COMPUTER PRODUCTS PARTNERS.



Computer product partners were also asked to put into order of importance five

characteristics of extranet service. These characteristics were 1) available 24 hours a day, 2) easy to use, 3) fast, 4) visibility/graphics, 5) informativeness. Following results emerged:

FIGURE 15. ORDER OF CHARACTERISTIC IMPORTANCE: PRODUCTS PARTNERS.



Pillar 1 in figure 15 illustrates the distribution of answers given what is the most important characteristic to the interviewee, pillar 2 the distribution of answers given what is the second important characteristic to the interviewee etc. As the importance lowers (the value in the x-axis grows), also the proportions of informativeness and 24 h availability in the pillars get smaller, informativeness is considered to be more important by interviewees than 24 h availability. As the importance lowers, the proportion of visibility/graphics -characteristic from the pillar grows (visibility/graphics emerges first time in the fourth pillar). Proportion of fast -characteristic is greatest in the second important characteristic column and then it starts to diminish. By looking at the graphical distribution of answers, it can be concluded that order of importance of these five characteristics for computer products partners is: 1) **informativeness**, 2) **fast**, 3) **24 h availability**, 4) **easy to use**, 5) **visibility/graphics**.

Importance of electronic communication in future

The interviewees were asked to evaluate how important do they perceive the role of electronic communication to be in future co-operation with their partners. They had four alternatives to choose their answer from: 1) critical success factor, 2) important, 3) not very important and 4) useless. **16 out of 17 interviewees indicated that in their opinion, electronic communication is critical success factor to their business and to co-operation with their partners in future.** 1 out of 17 indicated that it is important.

6.2 Computer Systems Partners

The main information needs and preferred mediums

Table 18 illustrates the importance of different information categories to computer systems partners interviewed. The average of answers given to question: "How important is this information to you and your business?" is illustrated in the second column of the table. The interviewees were asked to give a number answer from 1 to 4, where 1 means not important at all and 4 very important.

TABLE 18. IMPORTANCE AVERAGES OF 27 INFORMATION CATEGORIES GIVEN BY
COMPUTER SYSTEMS PARTNERS.

INFORMATION CATEGORIES	IMPORTANCE AVERAGE
price lists	3.8
availability of goods	3.7
ordering	3.6
product descriptions	3.6
technical product information	3.6
delivery status	3.5
support services	3.4
obsolete products	3.3
configuration tools	3.3
sales tools	3.3
customer feedback	3.2
brochures	3.2
service organisation descriptions	3.1
demo equipment	3.1
brochure ordering	2.9
other promotion material	2.9
information on contracts and accounts	2.8
HP event calendar	2.5
marketing programs	2.5
course descr. and timetables	2.5
course registr. and material ordering	2.5
white papers	2.5
press releases	2.5
reference information	2.5
info on industry solutions	2.5
dealer contact information	2.1
"chat box"	1.7

TABLE 19. MOST IMPORTANT INFORMATION CATEGORIES AND RESPECTFUL
PREFERRED MEDIUMS GIVEN BY COMPUTER SYSTEMS PARTNERS.

MOST IMPORTANT INFO	IMPORTANCE AVERAGE	PREFERRED MEDIUM (MODE)
1. price lists	3.8	1
2. availability of goods	3.7	1
3. ordering	3.6	1
product descriptions	3.6	1
technical product info	3.6	1
4. delivery status	3.5	1
5. support services	3.4	6
6. configuration tools	3.3	1
sales tools	3.3	1
obsolete products	3.3	1
7. customer feedback	3.2	6
brochures	3.2	1
8. service organisation		
descriptions	3.1	1
demo equipment	3.1	6

The most important information for computer systems partners (again, information categories that have importance averages greater or equal to 3) is listed in first column of table 5. The third column indicates the preferred medium to receive this information by listing the mode of answers given.

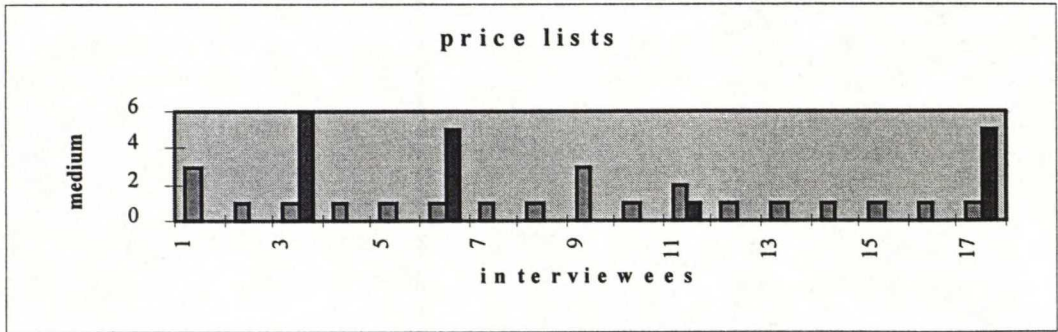
Computer systems partners interviewed regarded information on prices to be the most important for them and information on availability of goods next important, in addition, order making and product as well as technical product information got high importance averages (for computer products partners most important information was availability of goods, delivery status, obsolete products and order making).

Thus, online form is preferred by interviewees in receiving information on prices, availability of goods, delivery status, technical product information, obsolete products as well as in getting configuration and sales tools,

brochures and service organisation descriptions and making orders. Information on demo equipment and sales tools was considered more important by computer systems partners than computer product partners (this information was also wanted in online format) since computer products partners' answers gave these information categories lower importance average. **Computer systems interviewees, like computer product interviewees, wanted to give feedback in personal contact and to receive support services in personal contact as well.** In addition, they indicated that information related to demo equipment should be received in personal contact.

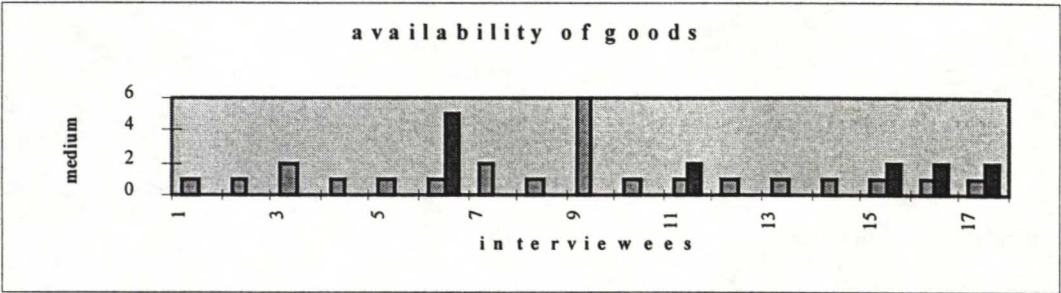
However, again to get a more precise view of the preferred mediums of computer systems partners concerning the important information for them (information categories in table 5 that have importance average greater or equal to 3), a short analysis of each important information category and given medium choices to receive this information are given a closer look in the following.

TABLE 20. PREFERRED MEDIUMS TO RECEIVE PRICE LISTS: COMPUTER SYSTEMS PARTNERS.



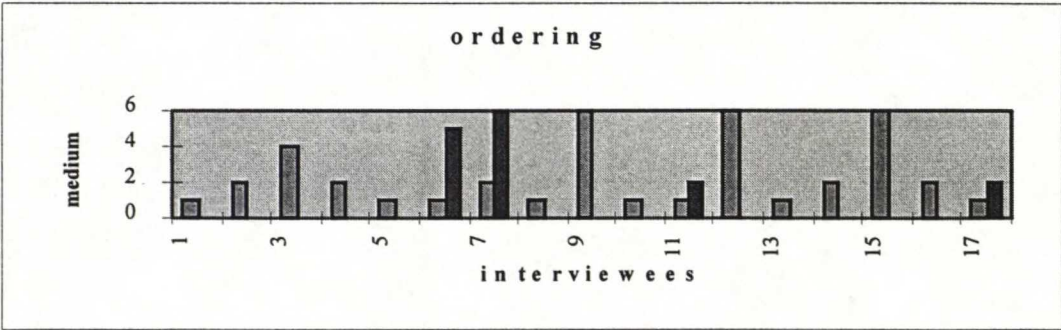
11 out of 17 interviewees preferred online price lists, 2 interviewees indicated that pricelists should be delivered both online and by fax, 1 wanted to receive price lists by e-mail, 1 both by e-mail and online and 1 both online and in personal contact. Thus, **each interviewee mentioned some electronic form either as their only choice or one of two preferred choices to receive price lists.**

TABLE 21. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON AVAILABILITY OF GOODS: COMPUTER SYSTEMS PARTNERS.



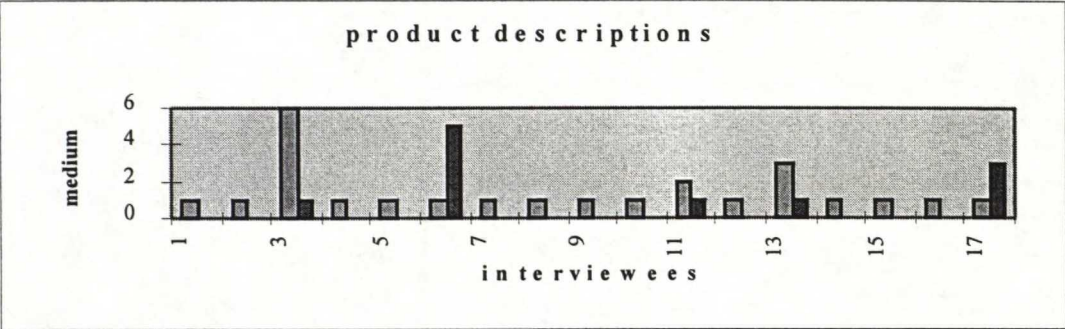
9 out of 17 interviewees wanted to receive information on availability of goods online, 4 interviewees wanted to have this information both online and by e-mail, 2 interviewees preferred e-mail, 1 mentioned both online and fax and 1 preferred personal contact. Thus, **all interviewees except one indicated electronic format to be the best to receive info on availability of goods.**

TABLE 22. PREFERRED MEDIUMS TO MAKE ORDERS: COMPUTER SYSTEMS PARTNERS.



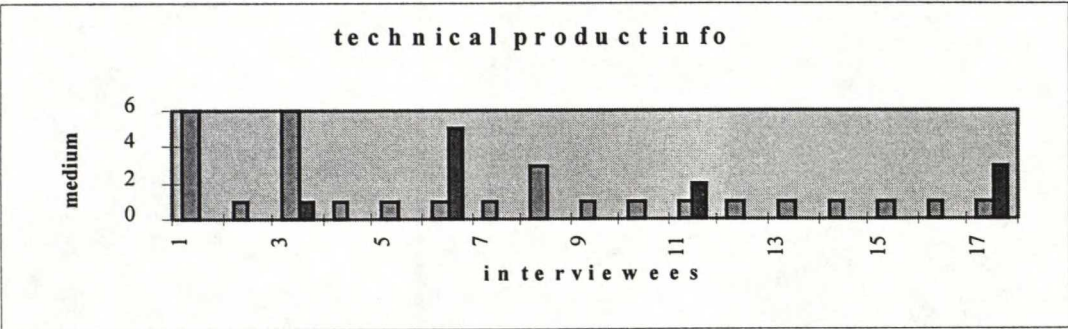
5 out of 17 interviewees wanted to make orders online, 4 by e-mail, 3 in personal contact, 2 both online and by e-mail, 1 by fax, 1 both online and by paper and 1 both online and personal contact. **As the above mentioned figure illustrates, the answers do have spread even though the mode falls to be 1. Alternative to electronic (online and e-mail) ordering seems to be personal contact.**

TABLE 23. PREFERRED MEDIUMS TO RECEIVE PRODUCT DESCRIPTIONS:
COMPUTER SYSTEMS PARTNERS.



12 out of 17 interviewees indicated that online format is the best to deliver product descriptions, 2 mentioned both online and diskette, 1 both online and e-mail, 1 both online and paper and one both online and personal contact. **Thus, all interviewees indicated online format as the preferred format or one of the two preferred formats to receive products descriptions. However, 5 interviewees indicated that in addition to online brochures some other medium should be available.**

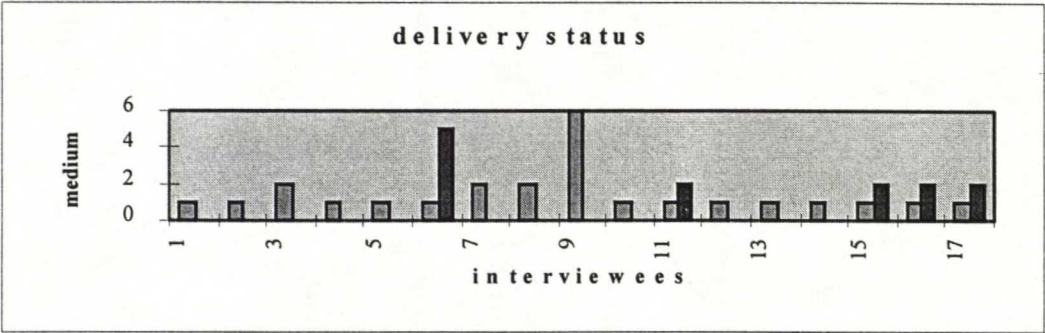
TABLE 24. PREFERRED MEDIUMS TO RECEIVE TECHNICAL PRODUCT
INFORMATION: COMPUTER SYSTEMS PARTNERS.



11 out of 17 interviewees indicated that online format is the best to deliver technical product information, 1 preferred both online and e-mail, 1 both online and diskette, 1 online and fax, 1 online and personal contact. 1 interviewee

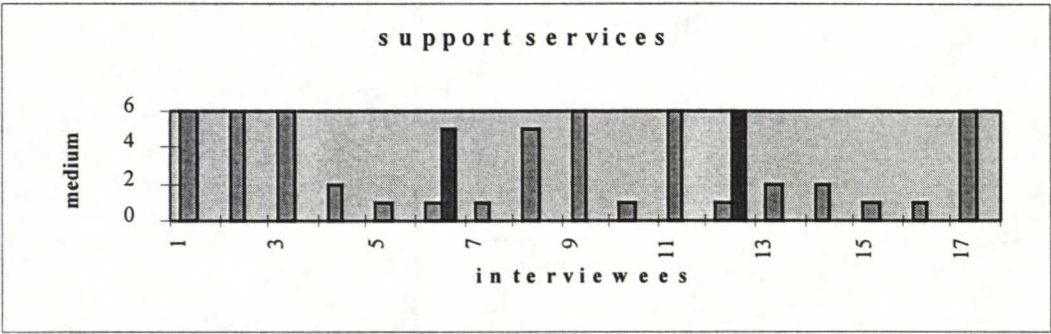
mentioned diskette and 1 preferred personal contact. **Electronic format was mentioned by 15 interviewees. 4 interviewees indicated that they wanted also another medium in addition to online format to technical product information, but one clear alternative did not exist.**

TABLE 25. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON DELIVERY STATUS: COMPUTER SYSTEMS PARTNERS.



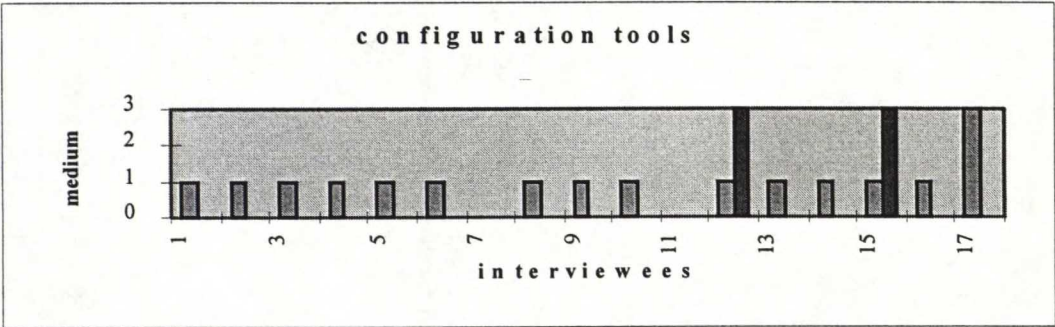
8 out of 17 interviewees preferred online format in receiving information on delivery status of goods, 4 preferred both online and e-mail, 3 mentioned e-mail, 1 both online and paper and 1 personal contact. **16 interviewees indicated that electronic format would be best to deliver this information, personal contact and paper were both mentioned once. In addition to online format, e-mail was seen as the other preferred medium to receive information on delivery status of goods.**

TABLE 26. PREFERRED MEDIUMS TO RECEIVE SUPPORT SERVICES: COMPUTER SYSTEMS PARTNERS.



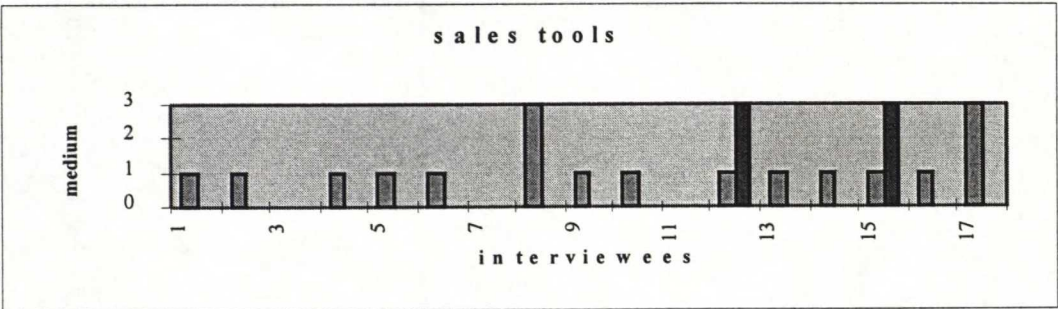
6 out of 17 interviewees indicated that support services should be given only in personal contact, 5 interviewees preferred online support, 3 wanted support by e-mail, 1 wanted both online and paper support, 1 wanted both online and personal contact support and 1 wanted support on paper.

TABLE 27. PREFERRED MEDIUMS TO RECEIVE CONFIGURATION TOOLS: COMPUTER SYSTEMS PARTNERS.



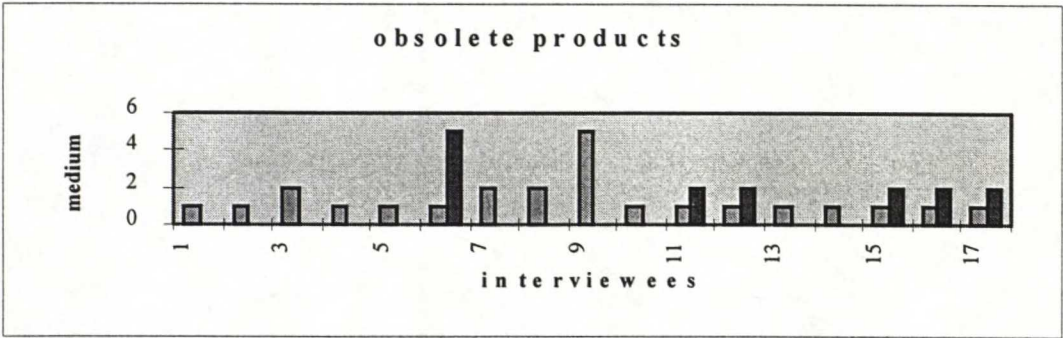
14 out of 17 interviewees preferred online delivery of configuration tools to diskettes. 2 interviewees indicated that configuration tools should be available both online and on diskette. 1 interviewee preferred diskette delivery.

TABLE 28. PREFERRED MEDIUMS TO RECEIVE SALES TOOLS: COMPUTER SYSTEMS PARTNERS.



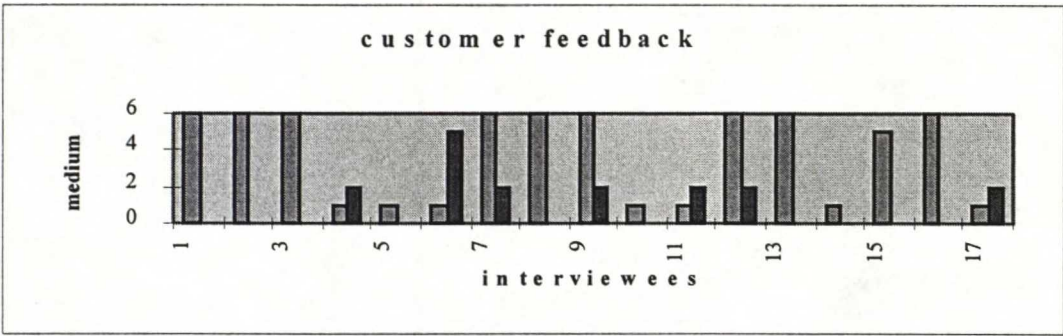
10 out of 15 interviewees preferred online format in delivering sales tools, 2 preferred diskette and 2 wanted them to be available both online and on diskette.

TABLE 29. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON OBSOLETE PRODUCTS: COMPUTER SYSTEMS PARTNERS.



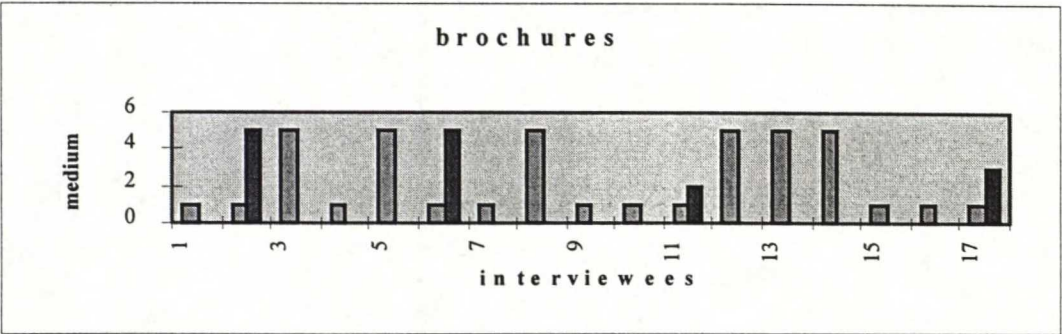
7 out of 17 interviewees indicated that information on obsolete products should be delivered online, 5 interviewees wanted to have this information both online and by e-mail, 3 interviewees preferred e-mail, 1 mentioned both online and paper and 1 mentioned only paper. **Thus, electronic format was the only or one of the two preferred mediums of 16 interviewees to receive information on obsolete products.**

TABLE 30. PREFERRED MEDIUMS TO GIVE FEEDBACK: COMPUTER SYSTEMS PARTNERS.



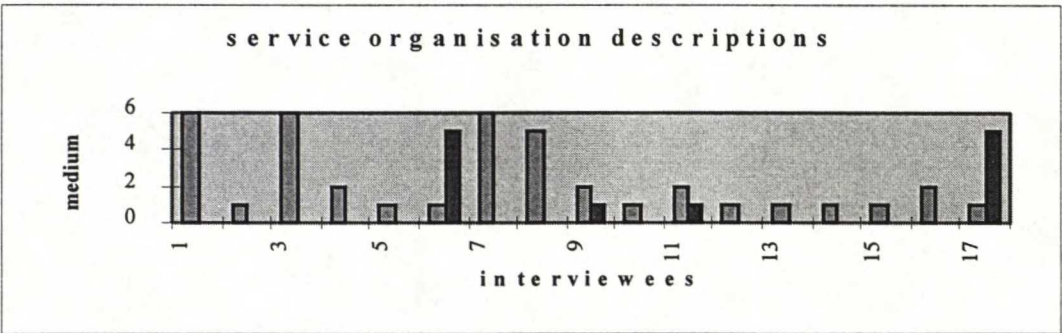
6 out of 17 interviewees wanted to give feedback in personal contact, 3 indicated that they would like to give feedback online, 3 preferred both online and e-mail, 3 both personal contact and e-mail, 1 wanted to give feedback both online and by fax and 1 only by fax.

TABLE 31. PREFERRED MEDIUMS TO RECEIVE BROCHURES: COMPUTER SYSTEMS PARTNERS.



7 out of 17 interviewees indicated that they would like to receive brochures only in online format, 6 preferred paper format and 2 wanted both online and paper brochures. 1 interviewee indicated that both online and e-mail brochures should be available and 1 preferred online and diskette in delivering brochures. **Thus, electronic brochure format was preferred by 11 interviewees.**

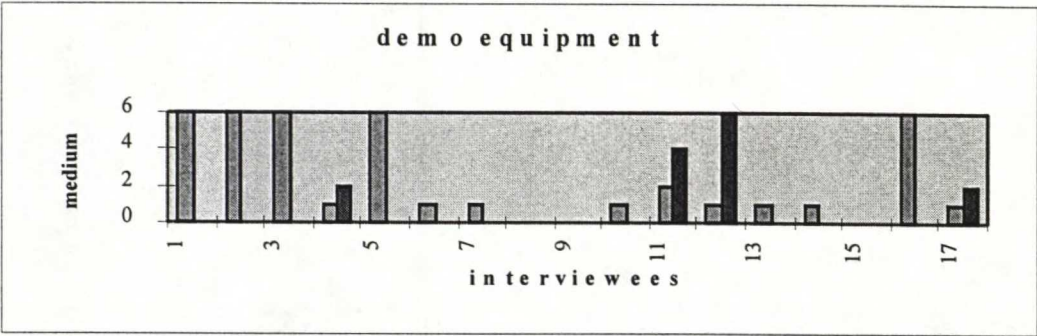
TABLE 32. PREFERRED MEDIUMS TO RECEIVE SERVICE ORGANISATION DESCRIPTIONS: COMPUTER SYSTEMS PARTNERS.



Information related to service organisation should be delivered online according to 6 interviewees, whereas 2 interviewees preferred e-mail and 2 both online and e-mail. 3 interviewees wanted to get this information in personal contact and 2 both online and by fax. **15 interviewees preferred electronic format as the only or one of the two preferred formats. E-mail and fax were the alternative**

mediums to online delivery.

TABLE 33. PREFERRED MEDIUMS TO RECEIVE INFORMATION ON DEMO EQUIPMENT: COMPUTER SYSTEMS PARTNERS.



5 out of 14 interviewees wanted to receive information on demo equipment (its' availability and ordering) online, 5 in personal contact, 2 online and by e-mail, 1 online and in personal contact and 1 both by e-mail and by fax.

Ability to use Extranet Service

At this point it should be kept in mind that computer systems partners interviewed did not all represent different organisations. Altogether there were 17 interviewees from 12 organisations. From eight organisations one person was interviewed, from four organisations two persons and finally, from one organisation three persons. To see why this was done, please see previous chapter.

The interviewees were asked to describe with a few words how they exploit internet (and services it enables) in their own business: both within their own organisation and also in co-operation with their customers and partners. From computer systems partner organisations 8 out of 12 indicated that they have a company intranet and all interviewees mentioned that they use electronic mail in their daily work. 9 out of 12 organisations have their own company www-pages.

Internet was used both to provide information and services to customers as well as to search for information for own business needs. Interviewees indicated that especially information on competitors and suppliers was sought from internet. **Thus, internet exploitation among computer systems partners did not differ very much from the one among computer products partners.** Suppliers' www-pages were used to get product information, configuration and sales tools and information on prices. The main difference between internet exploitation in interviewee's own business between computer products and systems partners emerged in usage of company's own www-pages. Computer product partner organisations (some of them quite small in size) used www-pages mainly to offer customers information on events and programs, electronic shopping possibilities and links to suppliers' www-pages. Computer systems partners indicated that if www was used as customer information medium, it was exploited to deliver customers product information, defect information and software updates.

Based on the above mentioned results it can be assumed that interviewee organisations are very well capable of adopting and using extranet service which is hardly surprising. The nature of case company's business, computer products and systems, must be kept in mind when these findings are examined. People and organisations who are engaged in selling and mediating these kind of products, must be able to use computers and be receptive to new technologies. Thus, the inability to use extranet service cannot be considered as an obstacle to introducing it.

Extranet improvements and important characteristics

As explained earlier, the information value model has five dimensions: truth, scarcity, accessibility, guidance and weight that each consist of different characteristics. And again this model is used to analyse value of extranet for computer systems partners of the case company. Some clarifications must be made so that the table results are interpreted correctly. As mentioned, in this study

easy to access -characteristic is interpreted in a way that in addition to easy access information is also fast available, thus, it reflects statements such as: "information must be easy and fast available". The knowledge of location (one location) - characteristic reflects statements such as: "To me it is essential that all information is centralised into one place where I can find everything I need".

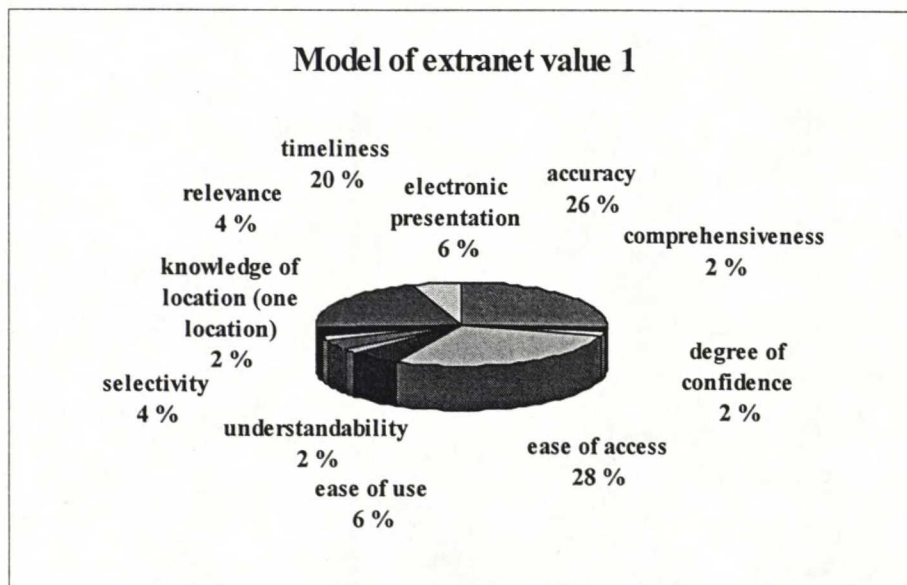
To explain the logic a little further (to increase the internal validity of the study), a couple of more examples of how actual interviewee answers were interpreted into table variables given below. For example, one interviewee indicated that: "I want to have a large pile of information from which I can select myself what is necessary to me". This statement resulted in two marks in the table: comprehensiveness and selectivity. Somewhat contradictory terms, but yet, very possible to realise simultaneously with extranet service. Another example is the electronic presentation -category. In the original model of Simpson and Prusak this characteristic was presentation and could be interpreted that by improving the presentation of information, it is possible to increase the weight of information. The interviewees, however, did not mention presentation characteristic in this sense. Instead, they indicated that electronic format/presentation would be advantageous so that they could easily redistribute and exploit files already created. Thus, the author took the liberty to add the word "electronic" to the table indicating that both electronic form and careful presentation add weight to information.

The third example of the table logic might be the similar emergence of "accuracy" and "timeliness" characteristics in the table. This is due to the fact that there is a certain expression in Finnish language ("Tiedon tulee olla ajantasalla") that is a combination of both accurate and timeliness -terms. Each time an interviewee used this expression, the author marked both characteristics mentioned to be as true to the original meaning of the interviewee as possible.

TABLE 33. VALUE OF EXTRANET FOR COMPUTER SYSTEMS PARTNERS REFLECTED BY MODEL OF INFORMATION VALUE VARIABLES.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
TRUTH																	
accuracy		x	x	x	x	x		x	x	x	x	x		x	x	x	x
validity																	
comprehensiveness									x								
degree of confidence		x															
SCARCITY																	
originality																	
creativity																	
source																	
penetration																	
ACCESSIBILITY																	
ease of access (24 h)		x	x	x	x	x	x	x	x	x	x		x	x	x	x	x
ease of use							x	x				x					
understandability							x										
selectivity									x			x					
knowledge of location																	
(one location)					x												
GUIDANCE																	
problem awareness																	
diagnosis																	
options																	
solutions																	
WEIGHT																	
relevance		x					x										
timeliness			x			x	x	x	x	x	x	x		x	x		x
electronic presentation	x					x										x	
medium style																	

FIGURE 16A. MODEL OF EXTRANET VALUE 1: COMPUTER SYSTEMS PARTNERS.



All computer systems partners interviewed indicated that in their opinion extranet service would improve their information reception from the case company. Figure 16a (Model of extranet value 1) illustrates the characteristics distribution of extranet that create value for these interviewees. In order of importance the characteristics mentioned by interviewees were:

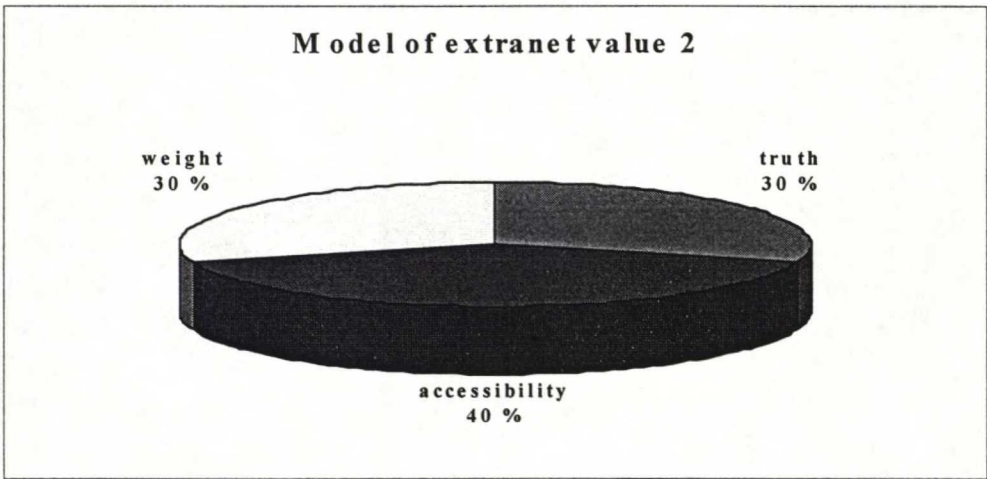
- ease of access
- accuracy
- timeliness
- electronic presentation and ease of use
- selectivity and relevance
- knowledge of location (one location), understandability, comprehensiveness and degree of confidence

Both computer systems and products partners valued ease of access, accuracy and timeliness of information (in this order) to be the most important characteristics of valuable extranet. Computer systems partners indicated that in addition to ease of

use, also electronic presentation format is valuable to them. Computer products partners did not indicate this.

Figure 16b (Model of information value 2) illustrates the distribution of main contributors to extranet value for computer systems partners. Thus, 40% of all interviewee statements indicated that **accessibility** component of information is a contributor to extranet value and also to improvements that extranet offers (the respective percentage for computer products partners was 48%). 30% of all interviewee statements indicated that **truth** component of information is also a contributor to extranet value and also to improvements that extranet offers (respective percentage for computer product partners was 33%). 30% of interviewee statements referred to importance of **weight** component of information as a source for extranet value (respective percentage 14%).

FIGURE 16B. MODEL OF EXTRANET VALUE 2: COMPUTER SYSTEMS PARTNERS.



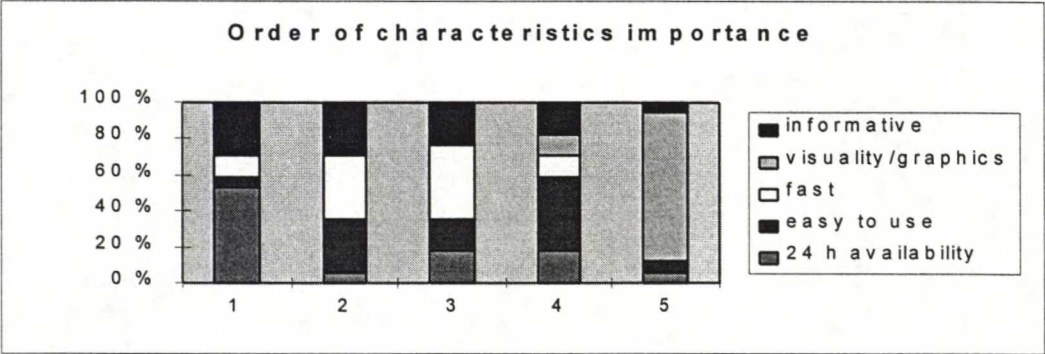
Thus, both computer products and systems interviewees valued accessibility as the most important source of value added to information. Both appreciated also truthfulness of information as the second important source of added value. Computer systems partners valued weight component of information more than computer products partners and in addition, 5% of

the statements of computer products partners valued the guidance component of information which did not come up at all in computer systems partners statements.

Computer systems partners valued “reusability” of once produced information more than computer products partners. One reason for this is the nature of business that most of systems partners conduct: they resell the products bought from HP as a part of their own solution to large corporate clients. Thus, it is advantageous to reuse the information received from HP by simply adding it to information that HP client organisations have produced themselves. 5% of all the statements given by computer products partners indicated that guidance component in extranet information would be valuable. This small amount, however, reflects an important fact. **Even though both partners groups expressed the importance of support services, they were slightly more important to smaller computer products partners. The fact that guidance component of information would be valued by products partners more than systems partners, reflects also their greater overall need for support services (diagnosis, options, solutions to problems).**

Computer systems partners were also asked to **put into order of importance** five characteristics of extranet service. These characteristics were 1) available 24 hours a day, 2) easy to use, 3) fast, 4) visuality/graphics, 5) informativeness. Following results emerged:

FIGURE 17. ORDER OF CHARACTERISTICS IMPORTANCE: SYSTEMS PARTNERS.



Pillar 1 illustrates the distribution of answers given what is most important characteristic to the interviewee, pillar 2 the distribution of answers given what is second important characteristic to the interviewee etc. As the importance lowers, also the proportions informativeness and 24 h availability -characteristics in the pillars gets smaller. As the importance lowers, proportion of visibility/graphics -characteristic from the pillar grows. As the importance scale is in its middle, proportion of fast is greatest. By looking at the graphical distribution of answers, it can be concluded that order of importance of these five characteristics is: **1) 24 h availability, 2) informativeness, 3) fast, 4) easy to use, 5) visibility/graphics.** Thus, computer systems user appreciates availability and informativeness over easy to use and visibility characteristics. The respective results for computer products users were slightly different: they valued informativeness as the most important and fastness as second important characteristic, 24 h availability was third.

Importance of electronic communication in future

The computer systems interviewees were also asked to evaluate how important do they perceive electronic communication to be in future co-operation with their partners. Again they had four alternatives to choose their answer from: 1) critical success factor, 2) important, 3) not very important and 4) useless. **11 out of 17 interviewees indicated that in their opinion, electronic communication is critical success factor to their business and to co-operation with their partners in future whereas 6 out of 17 indicated that it is important.** The respective results for products partners were 16 out of 17 and 1 out of 17.

6.3 Wholesalers

In this study 11 wholesaler employees were interviewed from four different wholesaler organisations. From three organisations three persons were interviewed and from one organisation two persons. 8 of 11 interviewees were either product or sales and marketing managers and one was CEO. Wholesaler interviewees answered to different set of questions with more open-ended nature than computer product and systems partners (see appendix) and therefore, also interview results are presented in a slightly different manner. However, the problems and questions do remain the same: why does a channel partner choose extranet as a preferred way to search for and receive needed information?

The main information needs and preferred mediums

Almost every interviewee indicated that the most essential information to them includes: **product descriptions, availability of goods, prices, technical product descriptions, delivery time and information on new products** (previous list is not in order of importance because the interviewees were not asked to prioritise the most important information, but rather to characterise the most important information categories to them). In addition, those that were in a marketing position emphasised the importance of information on marketing campaigns and marketing co-operation as well as wide availability of marketing material. CEO interviewed stressed that all **changes** related to above mentioned information are especially important and information on them should be available as soon as possible.

“There are always improvements that can be made”

The interviewees were also asked if they were satisfied to the information they need and receive from the case company and also to the way in which it is currently delivered. 5 interviewees indicated that they are satisfied, four

interviewees expressed that they are not satisfied and 2 expressed that both information itself and delivery mediums could be improved. 2 out of 5 satisfied interviewees mentioned that information content is especially good, one expressed that all mediums are easy to use, one was especially satisfied with the product information but mentioned that sometimes information on prices is given too slow and finally, one interviewee was satisfied because Partnership online (current HP online service in www) was step into right direction, thus he could exploit information in electronic format more easily. However, as one satisfied interviewee put it into words: "There are always improvements that can be made". One interviewee indicated that more co-operation should be made in business planning and objective formulation, so that common goals would be clear to everybody. Those that were not satisfied expressed following reasons:

- not enough information and information is always late
- information is fragmented and not accurate or in time: should be in one place where everything can be found easily
- information on new products and price changes especially poor
- Partnership online service is too slow

"In principle the same information is needed from the seller throughout the channel"

The wholesaler interviewees were also asked if they thought that their own information needs and information needs of resellers and dealers (computer products and systems partners) differ in any way from each other. This was done to find out how the wholesaler representatives see their own role in the channel (electronic networks and services are always presumed to cut profits from organisations that mediate goods because end-customers can have direct contact with sellers more easily).

- " *In principle the same information is needed from the seller throughout the channel*"
- " *We are the logistics piece and reseller is the service and sales piece*"

- *" In my opinion, wholesaler needs more information than reseller. In that way we can offer some value added to our resellers "*
- *"Wholesalers need information on channel strategies and markets, resellers on marketing campaigns and support"*
- *"Wholesalers need deeper and more information than resellers "*
- *"There are differences in shades and levels of information needed"*

Above are quotations from wholesaler interviewee statements when they were asked to characterise the difference between reseller and wholesaler information needs. Most interviewees thought that in principle same information is needed throughout the channel, however, wholesalers were thought to need deeper and more information than resellers. Only 2 interviewees saw clearly a difference between reseller and wholesaler information needs: resellers need information that support their own customer work such as information on marketing campaigns and support services whereas wholesalers need more strategic and logistics information as well as information on future events and strategies. These interviewees mentioned both that resellers need information of more "general" nature, thus, information on prices and promotion should be received from the wholesaler.

"When machine goes down, emergency is greatest"

The third question to wholesalers related to information needs aimed at clarifying why information on availability of goods, delivery status, obsolete products, prices, support services and products as well as service organisation descriptions were so important for resellers (computer products and systems partners) and how do the wholesalers perceive that resellers get this information. Wholesalers are in daily contact with various resellers and therefore they were asked to tell their overall opinion. The major reasons for importance were seen to be:

- all this information is basic in this business
- end-users, reseller's customers, are nowadays very competent and demanding
- resellers conduct project business, it is essential for them to know when the

goods are available, otherwise schedules fail

- resellers do not possess enough resources themselves to solve complicated technical problems, therefore seller's support and service organisation must be able to help ("when machine goes down, emergency is greatest")
- when information is not available in the channel, it takes a lot of time to find the right persons who have the information
- if enough information on these matters is available, reseller's own business planning and selling is easier ("when resellers are selling, they are more likely to get the deal if they already have information on availability and delivery")

7 wholesaler interviewees indicated that in their opinion resellers do not get the information they need properly: information is not available or is not accurate. Especially information delivery on current products (product descriptions) and obsolete products and prices should be improved. Both **better informing of wholesaler representatives and electronic delivery would improve the current situation according to the interviewees**. An interviewee mentioned that one reason for perceived non-availability of information might be the prevailing paper overflow. Another suggested that to improve wholesaler and reseller knowledge on support services and service organisation that HP offers, both paper and www brochures on the matters should be published. 2 wholesaler interviewees expressed that their own organisations do not function well enough in information provision either. One interviewee indicated that their resellers get information through 6 mediums, thus, he did not see that there was any problem at all. One mentioned that resellers have exactly the same information as he himself: information should, however, be deeper and more carefully updated if in electronic form.

Ability to use Extranet Service

A wholesaler interviewee organisation indicated that they have a company intranet where some company information is centralised. Two others had Lotus Notes -

based internal information systems. Some wholesaler interviewees exploited sellers' www-pages as an information source as well as to search information on products and clients. According to the wholesaler interviewees, in their own www-pages, resellers were offered different information and services such as:

- product catalogues
- ordering possibility
- price lists
- marketing campaigns
- links to sellers' www-pages
- availability of goods
- warranties
- technical product information

Not all wholesalers offered their customers, resellers, every information category mentioned above. But this quite wide electronic information availability illustrates well the fact that the **computer products and systems business is becoming more and more electronic information intensive**. Thus, as the organisations themselves extensively use internet based services to deliver customer information, it can be presumed that they have themselves the abilities to use and exploit extranet service.

Extranet improvements and important characteristics

Wholesaler interviewees were presented four open ended questions to get as full picture as possible of their own perceptions related to extranet service. First question aimed at clarifying if the interviewee thought that extranet service would improve the information delivery of the case company and if so, interviewee was asked why. Again, **all 11 interviewees saw that extranet would bring improvements to current situation**. Second question asked was what kind of information (content) should be delivered through extranet and third, what kind of characteristics and qualities should extranet service have. Fourth and last question

was related to the wholesaler and reseller business relationship: does the seller extranet make co-operation between wholesaler and reseller easier and if so, in what way?

The answers given are analysed as before with the help of the information value model and after that, comments that give new insights or are in other way very relevant to the topic, are analysed more thoroughly. The logic of the table 8 proceeds as before: each time an interviewee mentioned a value category from the information value model by Simpson and Prusak, the category gained one cross. The answers are tabulated in interview order, thus, column one is the first person interviewed and so on. Each interviewee could give as many value statements as possible, some gave only one whereas others gave four. This affects the interpretation of the table results. The following percentages counted from the table do not reflect distribution of interviewees who were of that opinion. Instead, they reflect the percentage of same statements given by interviewees.

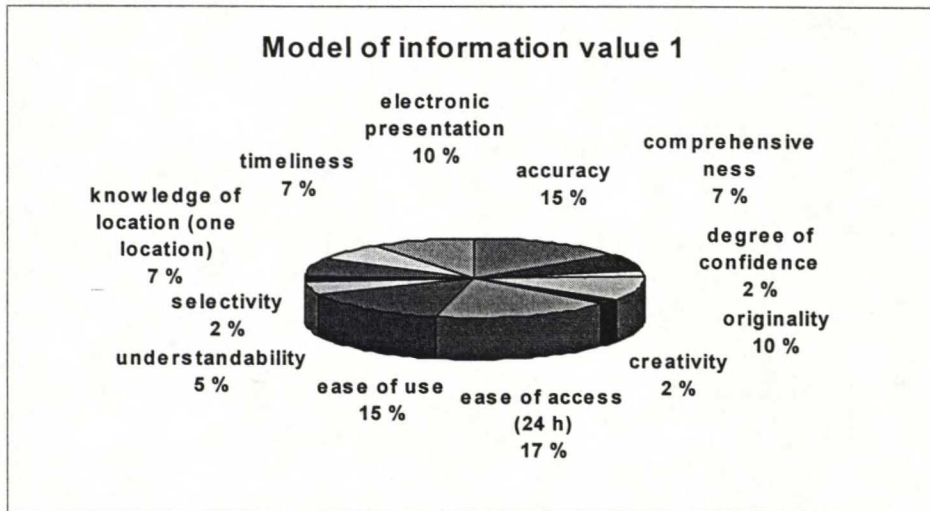
TABLE 34. VALUE OF EXTRANET REFLECTED BY MODEL OF INFORMATION VALUE VARIABLES.

	1	2	3	4	5	6	7	8	9	10	11
TRUTH											
accuracy	x		x		x	x		x	x		
validity											
comprehensiveness		x	x		x						
degree of confidence	x										
SCARCITY											
originality	x			x	x					x	
creativity								x			
source											
penetration											
ACCESSIBILITY											
ease of access (24 h)	x		x	x	x	x	x			x	
ease of use		x		x		x		x	x	x	
understandability							x			x	
selectivity			x								
knowledge of location (one location)							x		x	x	
GUIDANCE											
problem awareness											
diagnosis											
options											
solutions											
WEIGHT											
relevance											
timeliness					x	x			x		
electronic presentation		x						x	x		x
medium											
style											

Ease of access, accuracy and ease of use were again on top of the extranet qualities preference list as figure 18a illustrates. Originality and creativity did not come up in reseller and dealer interviews at all, in this context originality illustrates wholesaler statements such as: “I want the information I receive to be tailored to my needs” and creativity statement such as: “Information content must be grouped so that all products and other information can be easily found from the information sea”. Thus, wholesalers regard customisation of information to their needs as one source of information value as well as creativity in its creation. Understandability refers to statements given by two interviewees that information

must be clear (=easily understood).

FIGURE 18A. MODEL OF EXTRANET VALUE: WHOLESALERS.



In order of importance the characteristics mentioned by interviewees were:

- ease of access
- accuracy and ease of use
- electronic presentation and originality
- knowledge of location (one location), timeliness and comprehensiveness
- understandability
- selectivity, creativity and degree of confidence

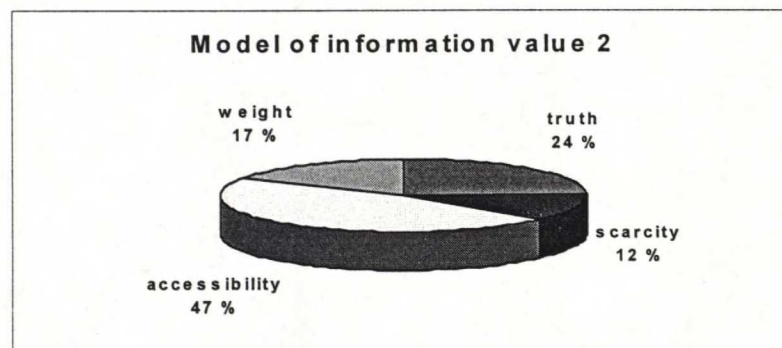
Some interviewees gave very insightful statements related to extranet service:

- “Extranet must be visually interesting and attractive, not only long piles of text. Plurality of services and characteristics is always a plus.”
- “Extranet must offer more information than we receive by paper: specific and original information, not only standard one.”
- “You must invest heavily in keeping the information in extranet updated.”

Figure 18b (Model of information value 2) illustrates the distribution of main

contributors to extranet value for wholesaler interviewees. Thus, **47%** of all interviewee statements indicated that **accessibility** component of information is a contributor to extranet value and also to improvements that extranet offers (the respective percentage for computer products partners was 48% and 40% for computer systems partners). **24%** of all interviewee statements indicated that **truth** component of information is also a contributor to extranet value and also to improvements that extranet offer (respective percentage for computer product partners was 33% and for systems partners 30%). **17%** of interviewee statements referred to importance of **weight** component of information as a source for extranet value (respective percentage for computer products partners 14% and for systems partners 30%)

FIGURE 18B. MODEL OF EXTRANET VALUE: WHOLESALERS.



Some valuable statements given by interviewees did not fit into the categories of information value model and therefore must be given attention at this point. Such statements were:

- **extranet information must be unfiltered (“we do not want to be dependent on many information intermediaries, we want to have access straight to the original source”)**
- **extranet information must be interactive (“I want to have the possibility to give feedback and to fill up different forms”) and service-oriented**
- **information on changes to extranet, especially important**
- **extranet information should be readily thought solutions that could be**

easily exploited in selling work

These statements reflect some major challenges of extranet service in addition to accuracy and timeliness: what information is strategically feasible to deliver to what audiences, where do the resources come from to support the interactivity (someone must react to feedback and received forms), who updates the changes to extranet and where does he receive the change information and finally, who is responsible and capable of producing “readily thought” information and solutions to clients that use extranet?

Fourth and last question was related to the wholesaler and reseller business relationship: does the seller extranet make co-operation between wholesaler and reseller easier and if so, in what way. All interviewees indicated that they believed that extranet would help them to give better service to resellers. Following reasons emerged:

- “I can find the information I need both in my own work and in servicing the reseller more easily. This results in greater efficiency for both.”
- “If information is in form that I can reformulate it and in one place (extranet), I can redistribute it faster and more efficiently.”

Importance of electronic communication in future

The wholesaler interviewees were also asked to evaluate how important do they perceive electronic communication to be in future co-operation with their partners. Again they had four alternatives to choose their answer from: 1) critical success factor, 2) important, 3) not very important and 4) useless. **17 out of 17 interviewees indicated that in their opinion, electronic communication is critical success factor to their business and to co-operation with their partners.**

6.4 Comparisons

The main information needs and preferred mediums

Computer systems partners interviewed regarded information on *prices* to be the most important for them and information on *availability of goods* next important, in addition, *order making* and *product as well as technical product information* got high importance averages. For *computer products partners* most important information was *availability of goods, delivery status, obsolete products and order making*.

TABLE 35. COMPARISON OF INFORMATION NEEDS OF COMPUTER PRODUCTS AND SYSTEMS PARTNERS

PRODUCT PARTNERS	SYSTEMS PARTNERS
1. availability of goods	1. price lists
2. delivery status	2. availability of goods
3. obsolete products	3. ordering
4. ordering	product descriptions
support services	technical product info
price lists	4. delivery status
5. product descriptions	5. support services
6. service organisation descriptions	6. configuration tools
7. configuration tools	sales tools
customer feedback	obsolete products
8. brochures	7. customer feedback
9. HP event calendar	brochures
marketing programs	8. service organisation descriptions
	demo equipment

Table 35 illustrates the differences in information needs between computer products and systems partners. Price information is more important for systems partners than for products partners and delivery status information vice versa. Systems usually have larger unit price than products which might be the reason

for price information importance difference. Obsolete product information is significantly more important to products partners than systems partners. This might be due to the fact that the overall product life cycle is shorter in computer products than in computer systems. Technical product information category was not included into important information of products partners at all: systems are more complicated of their product nature and therefore, technical product info is important to systems partners. Service organisation descriptions were perceived much more important by products partners than by systems partners: this illustrates well the fact that service is important to smaller products partners who often have inadequate resources themselves to solve technical problems. HP events and marketing calendar was also more important to products partners than for systems ones. **The most important information for wholesaler interviewees included product descriptions, availability of goods, prices, technical product descriptions, delivery time and information on new products.** Most wholesaler interviewees thought that in principle same information is needed throughout the channel, however, wholesalers were thought to need deeper and more information than resellers and dealers. This reflects the fact that information received is crucial for wholesaler customer value creation: if resellers and dealers have access to same information as wholesalers, no such thing as wholesaler value added exists.

Computer systems interviewees, like computer product interviewees, wanted to give feedback in personal contact and to receive support services in personal contact as well. The preferred medium was in all other important information categories online form (product partners indicated two preferred mediums to receive brochures: online and paper).

Ability to use Extranet service

Thus, internet exploitation among computer systems partners did not differ very much from the one among computer products partners. Suppliers' www-pages were used to get product information, configuration and sales tools and

information on prices. The main difference between internet exploitation in interviewee's own business between computer products and systems partners emerged in usage of company's own www-pages. Computer product partner organisations (some of them quite small in size) used www-pages mainly to offer customers information on events and programs, electronic shopping possibilities and links to suppliers' www-pages. Computer systems partners indicated that if www was used as customer information medium, it was exploited to deliver customers product information, defect information and software updates. **Wholesaler organisations exploited internet in their own business more than computer products and systems partners.** According to the wholesaler interviewees, in their own www-pages, resellers were offered different information and services such as: product catalogues, ordering possibility, price lists, marketing campaigns, links to sellers' www-pages, availability of goods, warranties and technical product information.

Extranet improvements and important characteristics

All 45 wholesaler, reseller and dealer interviewees thought that extranet service would improve the information delivery of the case company. 47% of wholesaler interviewee statements indicated that **accessibility** component of information is major contributor to extranet value and also to improvements that extranet offers, the respective percentage for computer products partners was 48% and 40% for computer systems partners. **Thus, accessibility was valued highest, computer systems partners valued accessibility lower than all other interviewees.** This might be due to the fact that as systems clients offer HP systems as a part of their own solution, they feel that situations where they would need HP information late at night do exist, but not all the time. 24% of wholesaler statements indicated that **truth** component of information is also a contributor to extranet value and also to improvements that extranet offers, respective percentage for computer product partners was 33% and for systems partners 30%. **Thus, wholesaler interviewees did not value truthfulness of information as high as**

products and systems partners. This reflects the notion that wholesaler business does not immediately suffer as for example the HP delivery schedules fail: wholesalers will have to pass the unfortunate news forward but they do not suffer financial and facial losses as the resellers and dealers do. 17% of wholesaler statements referred to importance of **weight** component of information as a third source for extranet value, respective percentage for computer products partners was 14% and for systems partners 30%. **Thus, systems partners' statements indicated higher importance of information weight than other interviewee statements which is related to the importance of electronic presentation (reusability of information) to systems partners.** The important value characteristics differed among interviewee groups as follows:

Computer products partners

- ease of access
- accuracy
- timeliness
- ease of use
- knowledge of location (one location) and validity
- diagnosis, solutions, relevance and comprehensiveness

Computer systems partners

- ease of access
- accuracy
- timeliness
- electronic presentation and ease of use
- selectivity and relevance
- knowledge of location (one location), understandability, comprehensiveness and degree of confidence

Wholesalers

- **ease of access**
- **accuracy and ease of use**
- **electronic presentation and originality**
- **knowledge of location (one location), timeliness and comprehensiveness**
- **understandability**
- **selectivity, creativity and degree of confidence**

Ease of access and accuracy of information are the most important information characteristics for all interviewee groups as above tables illustrate. **Timeliness** and **ease of use** come next and after them, **electronic presentation** and **originality**. Electronic presentation component is present in wholesaler and systems partners statements: presumably these interviewees can exploit and reuse information produced by the case company more than products partners. **Selectivity and relevance** came up in systems partners important characteristics, whereas for products partners they do not seem to be especially important: systems partners (larger than products partners) usually resell HP systems to large corporate customers, thus HP products are part of larger solution. HP information competes with information related to other components of the particular solution and therefore selectivity and relevance of information are valuable. **Knowledge of location (one location)** was almost as important to everybody. **Diagnosis and solutions** offered by information came up only in products partners' statements: support seems to be more important to products partners.

Importance of electronic communication in future

38 out of 44 interviewees regarded electronic communication to be critical success factor to their business in future, 7 regarded it to be important (1 computer product partner and 6 computer systems partners).

7. CONCLUSIONS

7.1 Summary and Major Findings

This study aimed at clarifying the channel partner value drivers for using an extranet service. Customer value should be the driving force behind every successful product offering and in this case, behind service and information delivery offering. This knowledge was sought by first examining the information needs of high technology vendor's channel partners and their preferred mediums to receive this needed information. After receiving this knowledge it was easier to understand why certain extranet characteristics were actually perceived valuable by partners. The extranet introduction requires resources as any business activity and therefore it is essential for the seller to know what actually is the value of extranet for its channel partners.

The main research question (and problem) of the study was put into words in a following way: **why does a channel partner choose extranet as a preferred way to search for and receive information from the seller?** The subquestions, which helped in constructing a picture of extranet's value for partners, were following: what are the main information needs of channel partners and in what form do they want to receive the information they need? Are partners technically able to use extranet services? What kind of information do the partners expect to receive from extranet? What kind of information delivery improvements do they expect to get from the use of extranet? How do the partners value different extranet characteristics like 24 hour availability, easy-to-use user interface, graphics and speed? How important do the partners see the role of electronic communication in future interaction with the seller? The nature of the research questions is more empirical than theoretical which results from the overall empirical nature of this study: extranet service, new electronic communication service based on internet technology, is a new phenomenon in a field of business.

Thus, there is almost no existing literature or theories that would straightaway explain the nature of phenomenon and its implications for companies. The only way to look for answers to research questions is to find and put pieces together from previous research that was conducted to examine some other more or less related phenomena as well as to go to the sites where extranets are or have been introduced and ask the questions aloud.

The previous formula was used to carry out this study: existing publications were examined and pieces were put together to provide the study a context and to present previous online service benefits findings. Then the author interviewed totally 45 channel partners of the case company, Hewlett Packard Finland, of their information needs, preferred mediums and benefit perceptions. The theoretical framework of the study (Figure 13) summarised the key concepts of the study and their relationships but in addition, it also illustrated the sequence of events that extranet introduction should follow. This sequential theoretical framework directed the flow of the empirical data collection in interviews: the data collection started from the information needs of different partners, proceeded to preferred mediums and finally, asked the why questions typical for case study.

The theoretical part of the study began by introducing the players: seller, partner, customer, supplier and links between them with the help of Porter's value system (1985). Understanding the problematics of each player's business was considered to be essential when considering information exchange needs. Partner's business is to serve its customer and the seller must keep this in mind when providing information and service. Partners may also differ from their technology adoption capabilities which was taken into consideration by introducing the technology adoption life cycle by Moore (1991).

Relationships were examined next. Relationships offer the context for information exchange and without existing relationships, an introduction of extranet service would not even be possible. Thus, relationship must exist before extranet

introduction. However, even though existing relationship is a sort of pre-condition for extranet introduction, the relationship can also develop as a result of extranet service. Interaction perspective by IMP Group (1982) is an important construct when extranets are considered because as their research points out, interaction is a reciprocal process and so should be information exchange via extranet. All the benefits of extranets will not realise if information provision and search is only a one-way process. As interaction is one of the key concepts of the study: a taxonomy of buyer-seller interaction processes by Möller and Wilson (1995) was presented next to provide some understanding of how extranet introduction and adaptive, co-ordinative and exchange interaction processes are related. Finally in chapter two the network perspective by Ford (1997) was introduced because it illustrates well the fact that information provision of one player is often dependent of information provision of other players.

Chapter three begun by introducing approaches to electronic commerce presented in interorganisational systems theory: first information processing view of interorganisational communication by Besaou&Venkatraman (1993) was introduced. According to Bakos (1991) when electronic commerce is exploited in existing business-to-business relationships with existing partners, electronic hierarchies, such as extranets, are likely to emerge. Next the impacts of internet technology to businesses were summarised by introducing a table by Hannus et al. (1996). The question of why would a partner choose extranet as preferred information search and reception medium, can only be explained with additional benefits that extranet offers compared to previous systems. The benefits occurring for partners from extranet use are of primary interest in this study, but of course the seller gains from extranet use as well. In the end of chapter three the possible partner benefits were discussed with the help of information value model by Simpson and Prusak (1995) who stressed that information value consists of accessibility, truth, guidance, weight and scarcity of information.

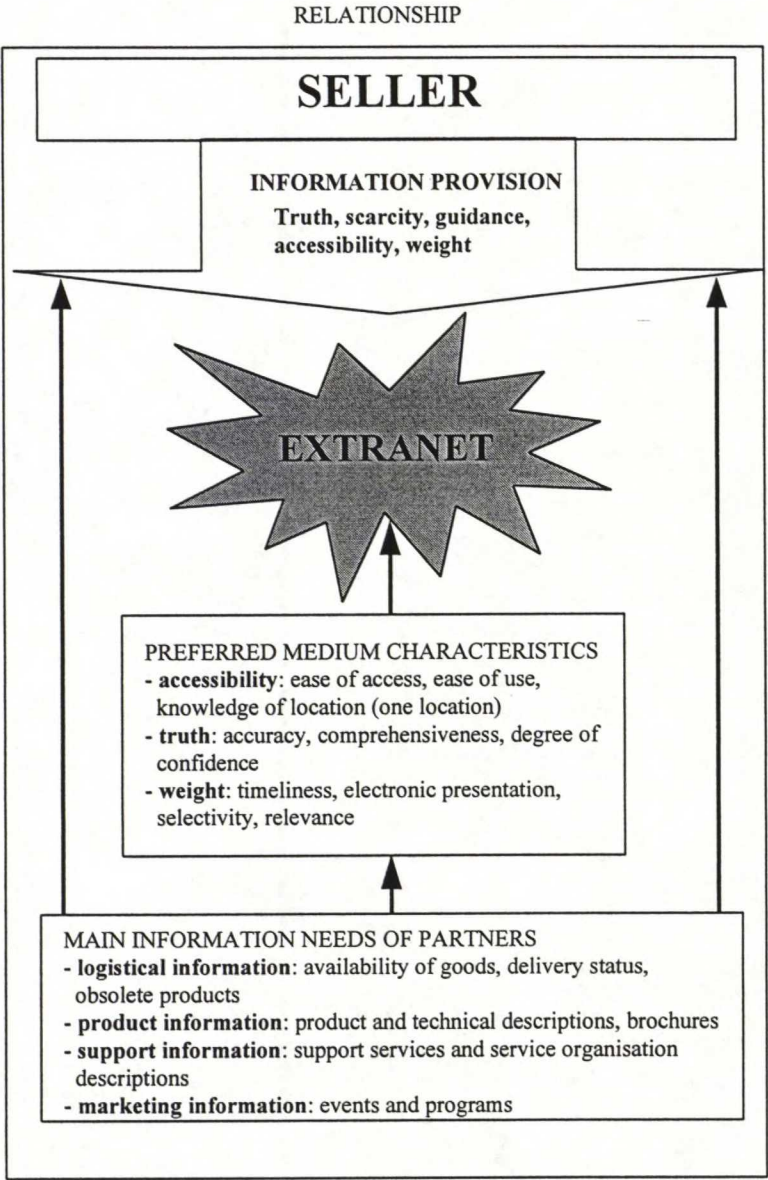
Empirical evidence was collected from 45 interviewees that were partners of the

case company, Hewlett Packard Finland. Partners represented three major partner groups: 1) resellers and dealers who mediate computer products such as computers, laserjets and portables, 2) corporate resellers that mainly mediate computer systems products such as unix servers to their corporate clients and 3) wholesaler representatives who mediate above mentioned products to above mentioned two groups.

Major Findings

Figure 19 in the following page summarises the major findings of the study in the form of reformulated theoretical framework. Information needs and preferred medium characteristics are the main contributors to extranet use which on the other hand is the clearest indicator of extranet value. It must be remembered that figure 19, however, is a synthesis of all interviewee answers. The study examined three different partner groups of the case company (computer products and computer systems partners and wholesaler representatives) and some findings relevant to each particular partner group will be presented in the following text.

FIGURE 19. EMPIRICALLY FOUND MAIN INFORMATION NEEDS AND PREFERRED MEDIUM CHARACTERISTICS.



Finding 1

Following information categories emerged as the most important ones in answers given by all interviewee groups: **availability of goods, delivery status, obsolete products, product and technical product descriptions, brochures, support services and service organisation descriptions and information on marketing events and programs.** Computer systems partners interviewed regarded information on *prices* to be the most important for them and information on *availability of goods* next important, in addition, *order making* and *product as well as technical product information* got high importance averages. For **computer products partners** most important information was *availability of goods, delivery status, obsolete products and order making*. The most important information for **wholesaler** interviewees included *product descriptions, availability of goods, prices, technical product descriptions, delivery time and information on new products*.

Finding 1A

The wholesaler interviewees indicated some reasons that explain why above mentioned information is essential for resellers and dealers. These were 1) competent and demanding end user, 2) project nature of reseller business 3) lack of resources to solve complicated technical problems and 4) easier selling task due to larger availability of information.

Finding 1B

The wholesaler interviewees were also asked if they thought that their own information needs and information needs of resellers and dealers (computer products and systems partners) differ in any way from each other. Most interviewees thought that in principle same information is needed throughout the channel, however, wholesalers thought that they need deeper and more information than resellers. Only 2 interviewees saw clearly a difference between reseller and wholesaler information needs. This finding illustrates the fact that

electronic information delivery mediums may have influence on the strategic relationships of different channel partners.

Finding 2

Computer systems interviewees, like computer product interviewees, wanted to give feedback in personal contact and to receive support services in personal contact as well. **The preferred medium was in all other important information categories mentioned above online form** (product partners indicated two preferred mediums to receive brochures: online and paper).

Finding 3

Interviewee companies exploited internet and services it enables in various ways in their own business. **Wholesaler organisations exploited internet in their own business more than computer products and systems partners.** According to the wholesaler interviewees, in their own www-pages, resellers were offered different information and services such as: product catalogues, ordering possibility, price lists, marketing campaigns, links to sellers' www-pages, availability of goods, garanties and technical product information. In addition to internet usage as customer information medium, interviewees indicated that internet was used to search for information on suppliers and products as well as on competitors. **Internet exploitation among computer systems partners did not differ very much from the one among computer products partners.**

Finding 3A

The overall picture of interviewee answers indicated quite wide electronic information availability. This illustrates well the fact that the **computer products and systems business is becoming more and more electronic information intensive.** Thus, as the organisations themselves extensively use internet based services to deliver customer information, it can be presumed that they have themselves the abilities to use and exploit extranet service.

Finding 4

Extranet service makes it possible for the seller to add value to partner information by introducing certain superior information and medium characteristics compared to traditional ways of delivering information. Following characteristics were found to be **the major sources of extranet value** as a medium and a information source for partners:

- **accessibility: ease of access, ease of use, knowledge of location (one location)**
- **truth: accuracy, comprehensiveness, degree of confidence**
- **weight: timeliness, electronic presentation, selectivity, relevance**

In page 117 of this study the extranet value answers given by different partner groups are compared. The aggregate preferred medium characteristics presented above as well as in figure 19 are derived from these tables: if a value characteristic was present in two of the three tables, it was considered to illustrate the main value drivers of this target group.

Finding 4A

All 45 interviewees of the empirical study thought that extranet would bring improvements to the current situation in information delivery of the case company.

Finding 4B

1) Ease of access, 2) accuracy and 3) timeliness were the three most important extranet characteristics for all three interviewee groups. In addition to these, **electronic presentation, ease of use and knowledge of location (one location)** were seen as next important characteristics. However, in the end of the important characteristics lists there were some differences:

- computer products partners: **guidance** component (diagnosis and solution offered by information) was not mentioned by any other group than products partners which indicates greater need for support
- computer systems partners: importance of **selectivity and relevance** which

creates a challenge for information production because information must be customised

- wholesalers: **originality** was mentioned only by this group of interviewees and refers to the fact that interviewees want to have straight access to original source that creates information

Finding 5

38 out of 44 interviewees regarded electronic communication to be critical success factor to their business in future, 7 regarded it important (1 computer product partner and 6 computer systems partners).

7.2 Managerial Implications

In the following some recommendations for management are given for successful implementation of extranet service. Recommendations are based both on empirical research findings of the study and own perceptions of the author.

- The major challenge of extranet service lies in the accuracy and timeliness of information. If the information delivered via extranet improves the accuracy and timeliness of information, extranet has reached its most important goal. This, however, requires effort from the company representatives: people must be motivated to produce the information content to extranet and also to keep it continuously updated. In today's hectic business environment this may pose some difficulties.
- Management must also consider extranet service from the strategic perspective: what information to deliver to what audiences is a major decision to make, at least in the business such as the one of the case company with many intermediaries between the end-customer. The sellers may have a significant influence on the whole industry structure if they decide to deliver all information available to everybody.

- Extranet information production decisions include also other matters in addition to accuracy and timeliness: **interactive** nature of extranet requires someone to react to feedback, questions and forms sent via extranet. Employees may react to this as an additional workload that does not pay off and therefore, either additional resources must be assigned to the matter or otherwise make sure that the quality of extranet service is high. Some interviewees of this study indicated that they wanted to receive “readily thought” information and solutions via extranet. Customisation of information is a challenge itself and an additional challenge rises from the fact that customised solutions would be offered in online form to clients.
- One requirement for successful extranet service is that company’s own internal information generating processes function efficiently. It must be clear to everybody who is ultimately responsible for providing others the particular information. This is especially a challenge for multinational companies such as HP who operate worldwide and have many organisational layers in many countries.
- Partner perceptions are essential in developing and maintaining a successful extranet service. There is no use to offer services that are not used. The nature of extranet, electronic secured online connection, requires that information is accurate and timeliness but also that networks are fast and functional. If the connections are slow or the information content includes only huge graphic files, the usability aspect of extranet is likely to suffer. Therefore, listening to customer feedback after introducing an extranet service is essential also for extranet success.
- When introducing extranet into channel communication, marketing management will have another customer information medium to master that must be allocated resources and developed. Within some time span extranet

will have influence on marketing and promotion mix decisions of the company: the roles of support organisation, customer magazines, price and product information diskettes and other customer information mediums are likely to change when new player enters the game.

- It is very likely that extranet will not offer any lasting competitive edge for the case company or any other organisation introducing it. This is due to the fact that customer pull for this types of services has increased heavily and therefore extranet introductions have become more commonplace (at least in computer business). Thus, management should keep in mind that innovators gain in the competitive edge battles and that this is likely to be true also in case of extranets. The more innovative services and helpful information delivered to partners via extranet, the more likely the company is to stay ahead in competition of best service.
- The financial and efficiency gains achieved via extranet are difficult to show true and customers and partners are not likely to buy the products solely because of company's great extranet solution. It is more likely, however, that extranet will at least partially replace some other information mediums and cost savings will result, but it may also be a reality that extranet is an additional cost in marketing budget. The company may find itself in a situation that in the short term customers expect to have a one more information medium but do not accept any price increases due to improved service. Today extranet solution and its payoff will probably be one more of the intangible assets of the company but management should not be afraid of this: the future of internet technology uses is unpredictable and therefore extranet is an investment, and at the same time preparation, for the future.

7.3 Research Critique and Suggestions for Further Research

Research Critique

The channel partner information needs do have characteristics that do not depend on the industry (for example availability of goods and delivery status as well as information marketing programs and events) because every channel partner in every industry has one major responsibility: to mediate the goods to the end customer. The most information need findings of this study are, however, in one way or the other typical for the industry concerned. The shortening product life cycles and complicated nature of high tech products create needs that do not exist in for example consumer durables industry. For example information on obsolete products and essentiality of support services are good illustrations of this. Thus, information need findings of this study are generalisable only to similar fields of business.

The high acceptance of online form as preferred delivery medium deserves one word of caution: this finding holds true only if the beneficial characteristics of online form are actually experienced by partners. Findings related to technology acceptance and abilities to use extranet are based on the assumption that interviewee organisation's own acceptance and use of new technologies is an illustration of its capabilities. However, organisations consists of individuals with different skill levels. In this case interviewees indicated wide acceptance of online form as preferred medium which reinforces the finding that interviewees are capable of using extranet. But generally speaking in each specific extranet or other new technology research case, the researcher must determine some variable that might well illustrate the interviewee capabilities to use the service.

Research critique is also supposed to contribute some answer to the question if the researcher herself would have done something differently when considering the

choices she made in the beginning of the study and the results she received. The industry chosen was on the other hand very fruitful to examine extranets: industry is turbulent and margins are going down which makes the players interested in all the ways in which they can improve their business and make it more efficient. On the other hand however, the researcher felt that due to the prevailing continuous lack of time caused by the fast moving business, some interviewees did not contribute as much as they could have in the interview. This fact points out that fewer interviewees with more time and more to say might have increased the plurality of results.

Suggestions for Further Research

This study has concentrated on the main information needs, preferred mediums and extranet value for partners in delivering the needed information. These matters are crucial when planning and making decisions about characteristics as well as content, width and depth of information in extranet. Thus, when introducing an extranet or other electronic communication or commerce service, these questions are relevant for all businesses. However, when internet technology based services such as intranets and extranets and www-commerce have become more commonplace in business, the research focus should shift on their impacts on business processes and relationships as well as on improvements that they have generated and so on.

In the following, some questions and problems related to extranets and business are briefly presented as suggestions for further research. Eventhough the internet technologies are relatively easy to implement, there are matters such as transaction and payment security, that may hinder wide business user acceptance of these technologies. Therefore, at this point in time (January 1998), the most interesting future research area related to extranet and web-technologies in general, is if they ever will be as widely accepted as e-mail, telephone or facimile. And why or why not? On the other hand, if extranet will be the electronic commerce and

information delivery medium of the business-to-business community in future, how have extranets changed the commerce customs and processes compared to this moment? Will businesses use extranet solutions internationally or are they preferred in trade with domestic partners only? Does the extranet service spread to offer also online training enabled by multimedia and other at this point almost unimaginable services: to which purposes will the extranet be used in future? How will the relationships and networks between sellers, partners and buyers alter if extranet will be one of the main mediums of business-to-business commerce and communication? In what industries and businesses extranets are the most applicable and the most efficient way to organise the interorganisational communication and trade: what industry specific services and solutions are best fostered with the use of extranet? Do extranets significantly alter the skill requirements of company employees as the nature of services and information offered to clients via extranet differs from the one produced in paper and in personal contact?

You can never be sure of which emerging technologies are going to success and which will fail but in case of extranets the benefits do exist and are available for businesses at relatively low cost. Therefore it is very likely that the business exploitation of internet technology is heading towards extranet use: that is, a solution that offer benefits measurable in money instead of just a passive promotion medium what corporate www pages currently are.

LIST OF REFERENCES

Anderson et al. 1994. Dyadic Business Relationships Within a Business Network Context. *Journal of Marketing* Vol. 58 (October 1994), 1-15.

Bakos, J. Yannis 1991. A Strategic Analysis of Electronic Marketplaces. *MIS Quarterly*, September 1991, 294-310.

Bensaou, M.&Venkatraman, N. 1994. *Interorganisational Relationships and Information Technology: A Conceptual Synthesis and A Research Framework*. INSEAD, France.

Bloch et al. 1996. On the Road of Electronic Commerce - a Business Value Framework, Gaining Competitive Advantage and Some Research Issues. 21.3.1997 in <http://is-2.stern.nyu.edu/~mbloch/docs/roadtoec/ec.html>.

Cavaye, A. 1995. The Sponsor-Adopter Gap - Differences Between Promoters and Potential Users of Information Systems that Link Organisations. *International Journal of Information Management*, Vol. 15, No. 2, 85-96.

Cespedes, Frank V. 1995. *Concurrent Marketing*. Harvard Business School Press, Boston.

Collier, D. 1991. New Marketing Mix Stresses Services. *The Journal of Business Strategy*, March/April, 42-45.

Cronin, Mary J. 1995. *Doing More Business on the Internet*. Van Nostrand Rheinhold, USA.

Davidow, William H. 1986. *Marketing High Technology*. The Free Press, New York.

Gröönroos, C. 1994. Quo Vadis, Marketing? Toward a Relationship Marketing Paradigm. *Journal of Marketing Management* Vol. 10, 347-360.

Hannus, Huomo, Korhonen, Kortesiemi, Lamminmäki, Mäkelin, Vuoria 1996. *Internet ja Intranet yritystoiminnassa*. HM&V Research Oy.

Hinrichs 1997. Intranet 101. 10.4.1997 in
<http://www.intranetjournal.com/newbie.html>.

Hoffmann, D.&Novak, T. 1995. Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations. 21.3.1997 in
<http://www2000.ogsm.vanderbilt.edu>.

Hytti, Ulla 1996. Transnational Marketing Skills –Background. *Turku School of Economics and Business Administration, Series C Discussion 8/96*.

Juttner, U.&Wehrli, H. 1995. Relationship Marketing from a Value System Perspective in Payne, A. (edit.) *Advances in Relationship Marketing*. Clays Ltd, England.

Kotler, Philip 1991. *Marketing Management*. Seventh edition. Prentice-Hall, USA.

Levitt, Theodore 1983. *Mielikuvitusta Markkinointiin*. Rastor, Helsinki.

Madnick, Stuart E. 1991. *Information Technology Platform in Morton, Michael S. Scott (edit.) Corporation of 1990s*. Oxford University Press, New York.

Miles M. B. and Huberman A. M. 1994. *Qualitative Data Analysis*, Sage Publications, Thousand Oaks, California.

Moore, Geoffrey A. 1991. *Crossing the Chasm*. HarperCollins Publishers, USA.

Morgan, R.&Hunt, S. 1994. The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing* Vol. 58 (July 1994), 20-38.

Möller, Kristian & Wilson, David 1995. *Business Marketing: An Interaction and Network Perspective*. Kluwer Academic Publishers, USA.

Nidumolu, Sarma R. 1995. Interorganisational Information Systems and the Structure and Climate of Seller-Buyer Relationships. *Information&Management* Vol 28, 89-105.

Payne, Adrian 1995. Relationship Marketing: A Broadened View of Marketing in *Payne, A. (edit.) Advances in Relationship Marketing*. Clays Ltd, England.

Porter, M.&Millar, V. 1985. How Information Gives You Competitive Advantage in *Revolution in Realtime*. Harward Business School Press, Boston.

Rogers, Everett 1983. *Diffusion of Innovations*. The Free Press, New York.

Row, H. 1997. The Electric Handshake - CIO's Electronic Commerce Resource Center. 20.3.1997 in <http://www.cio.com/forums/ec/ec-handshake.html>.

Rosenbloom, Bert 1995. *Marketing Channels - A Management View*. The Dryden Press, USA.

Räsänen, Henrik 1994. *High Tech Knowledge - Buying the Invisible. An Inquiry into Buying International, Industrial, Complex, Knowledge Intensive Systems Products*. Sarja D-3 1994. Åbo Akademies Tryckeri, Turku.

Simpson, C.&Prusak, L. 1995. Troubles with Information Overload - Moving from Quantity to Quality in Information Provision. *International Journal of Information Management* Vol. 15, No. 6, 413-425.

Steinfeld et al. 1996. The Impact Of Interorganisational Networks On Buyer-Seller Relationships. 20.3.1997 in <http://www.use.edu/dept/annenberg/vol1/issue3/steinfld.html>.

Venkatraman, N. 1991. *IT-Induced Business Reconfiguration in Morton, Michael S. Scott (edit.) Corporation of 1990s*. Oxford University Press, New York.

Yin, R. K. 1994. *Case Study Research - Designs and Methods*, 2nd ed., Sage Publications, Thousand Oaks, CA.

APPENDIX A

QUESTIONNAIRE FOR PARTNERS OF INFORMATION NEEDS AND ELECTRONIC COMMUNICATION

ATTENTION!! THIS SET OF QUESTIONS IS SENT BEFOREHAND ONLY FOR YOUR INFORMATION!!

ACTUAL INTERVIEW TAKES PLACE WITHIN 2-3 WEEKS VIA TELEPHONE. PLEASE SPARE THIS SET OF QUESTIONS UNTIL WE CONTACT YOU. THANKS IN ADVANCE!!

Company Name

Contact Person and Position

Telephone

Fax

Address

E-mail

DESCRIPTION OF PARTNER'S BUSINESS

How many years have you co-operated with HP? _____ years.

Turnover: _____

Turnover division by products:

a. Hardware _____

b. Software _____

c. Services _____

Wholesalers that partner uses:

Profile of partner's customers(%):

Government, public organisations _____

Education _____

Large companies (>500 employees) _____

Small and medium sized (10-499 employees) _____

Microcompanies (<10 employees) _____

Consumers _____

Do you exploit Internet in your own business? If so, how?

a. Within your own organisation (information acquirement, intranet-services)

b. With partners and customers (www-pages, web-based services, e-mail etc.)

WWW-Address: _____

PARTNER INFORMATION NEEDS

These questions are related to the table on the next page:

- A. What number by scale 1-4 (1=poor, 4=excellent) would you give for HP for current _____?
- B. How important is _____ information for your company (scale 1-4)?
- C. In what form/through which medium would you like to receive _____?
- 1 online
 - 2 e-mail
 - 3 diskette or CD
 - 4 fax
 - 5 paper
 - 6 personal contact (telephone/personal meeting)

	A Current (1-4)	B Importance (1-4)	C. Preferred Medium
PRODUCT INFORMATION			
- product descriptions			
- price lists			
- brochures			
- technical product info			
- support services			
- presentation material			
PRESS RELEASES			
- press releases			
- white papers			
TOOLS			
- configuration tools			
- sales tools			
ORGANISATION DESCRIPTIONS			
- service organisation descriptions			
- reseller contact info			
LOGISTICS			
- availability of goods			
- delivery status			
- obsolete products			
- ordering			
- contract and account info			
DEMO EQUIPMENT			
- descriptions and ordering			
REFERENCES			
- reference information			
- industry solutions			
EDUCATION			
- course descriptions and schedules			
- course registration and material ordering			
FEEDBACK			
- customer feedback			
- chat box			
MICELLANEOUS			
- HP event calendar			
- marketing programs			

OPEN ENDED QUESTIONS

What is the most important information for you from previous table (3 things)?

Do you believe that Extranet service will improve your information acquisition from HP? Why/why not?

Which factors contribute to value of electronic communication especially for your own company?

What would be the order of importance of following extranet characteristics: 24 h availability, informativeness, speed, visuality/graphics, informativeness?

1

2

3

4

5

How important is electronic communication in your future co-operation with customers and partners?

1 critical success factor

2 important

3 not very important

4 unnecessary

In addition to you are there other persons in your company that would benefit from HP's extranet service?

Would you like to give feedback to HP related to this questionnaire or some other thing?? Word is yours...

APPENDIX B

EXTRANET QUESTION SET FOR WHOLESALERS

Company Name

Contact Person and Position

Telephone

Fax

Address

E-mail

WHOLESALE AND HP

How many years have you co-operated with HP? _____ years.

Turnover: _____

Do you exploit Internet in your own business? If so, how?

a. Within your own organisation (information acquirement, intranet-services)

b. With partners and customers (www-pages, web-based services, e-mail etc.)

**4. What are the most important things that you need information on from HP?
Why these things you mentioned are important to you?**

**5. Are you satisfied to information that you get from HP and the wayit is
delivered? Why/why not? In what could the information delivery be improved?**

**How important is electronic communication in your future co-operation with
customers and partners?**

- 1 critical success factor**
- 2 important**
- 3 not very important**
- 4 unnecessary**

**7. Would extranet service improve your company's information acquirement
from HP? Why/why not?**

8. What kind of INFORMATION should extranet contain? WHY?

9. what kind of QUALITIES AND characteristics should extranet service possess? WHY?

WHOLESALE AND RESELLER

**HP SUPPORT
HP SERVICE ORGANISATION**

**AVAILABILITY OF GOODS
DELIVERY STATUS
OBSOLETE PRODUCTS**

**PRODUCT DESCRIPTIONS
PRICE LISTS**

CUSTOMER FEEDBACK FOR HP

HP EVENT CALENDAR

10. In your opinion, how important is above mentioned information for resellers? Why?

11. Do you think that information delivery to resellers related to above mentioned things works fine? Could it be improved in some way? If so, how?

12. Are resellers aware of current web-services offered by HP?

13. What kind of information delivered by HP is especially important for

a. wholesaler

a. resellers

14. Do you think that extarnet service offered by HP will improve co-operation between wholesaler and resellers? If so, how?

15. Would you like to give feedback to HP related to this questionnaire or some other thing?? Word is yours...